



April 30, 2010

Alex Fischer, P.G.
Environmental Supervisor -
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

**RE: Form 28 & Supporting Documents for OXY USA WTP LP Central Water Handling Facility
Garfield County, CO
Oxy Operator No.: 66571**

Mr. Fischer,

Olsson Associates (Olsson) was contracted by OXY USA WTP LP (Oxy) to provide Environmental Engineering and Consulting Services associated with permitting natural gas development operations in Garfield County, Colorado.

On behalf of Oxy, I am providing you with 2 hard copies and the electronic files associated with Oxy's submittal of Form 28 Centralized E&P Waste Management Facility for the Oxy Central Water Handling Facility. This package was originally submitted June 2009 and has been updated as a result of comments provided by COGCC Environmental Protection Specialist Chris Canfield. In addition to the revised Form 28 and all supporting documentation, Oxy's responses to Mr. Canfield's comments are also enclosed.

If you have any questions or require additional information, please contact me at the number given below.

Thank you for your attention in this matter,

Lorne C. Prescott
Senior Project Scientist

Enclosures: as stated



State of Colorado Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax: (303) 894-2109

CENTRALIZED E&P WASTE MANAGEMENT FACILITY PERMIT

Submit this Form and accompanying documents for each facility per Rule 908. Financial Assurance in the amount of \$50,000 is required to operate each facility.

FOR OGCC USE ONLY

Surety ID: _____

Complete the Attachment Checklist

	Oper	OGCC
Site description (topo, geol, hydro)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Adjacent land use description	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Topographic map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Site drainage map with structures	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Scaled drawing and survey map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Facility design & engineering	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Operating plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water analysis report	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Financial assurance	<input type="checkbox"/>	<input type="checkbox"/>
Closure plan Preliminary	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Local govt zoning compliance	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Local govt permits and notice	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

OGCC Operator Number: 66571	Contact Name and Telephone: Daniel I. Padilla
Name of Operator: OXY USA WTP LP	No: (970) 263-3637
Address: P.O. Box 27757	Fax: (970) 263-3694
City: Houston State: TX Zip: 77227	
Surface Owner (if different than above): _____	
Address: _____	
City: _____ State: _____ Zip: _____ Phone: _____	
Facility Name: Central Water Handling Facility	Location (QtrQtr, Sec, Twp, Rng, Mer): SWSW, Sec 29, T6S, R97W, 6th PM
Address: See attached - Site Description	Latitude: 39.489163
City: _____ State: _____ Zip: _____	Longitude: -108.248747
Phone: _____ Fax: _____	

1. Is the site in a sensitive area? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N See attached supplemental info	2. What are the average annual precipitation and evaporation rates for the site? Precipitation: 16.41 inches/year Evaporation: 45 inches/year
3. Has a description of the site's general topography, geology and hydrology been attached? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
4. Has a description of the adjacent land use been attached? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	5. Has a 1:24,000 topographic map showing the site location been attached? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
6. Has a site plan showing drainage patterns, diversion or containment structures, roads, fencing, tanks, pits, buildings and any other pertinent construction details been attached? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
7. If site is not owned by the operator, is written authorization of the surface owner attached? <input type="checkbox"/> Y <input type="checkbox"/> N	8. Has a scaled drawing and survey showing the entire section(s) containing the proposed facility been attached? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
9. What measures have been implemented to limit access to the facility by wildlife, domestic animals or by members of the public? Briefly explain. Guard station and/or locked gate located at Oxy's property boundary; wildlife friendly fence has been installed to control access to the facility by wildlife, domestic animals and the public.	
10. Is there a planned firelane of at least 10 feet in width around the active treatment areas and within the perimeter fence? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	11. Is there an additional buffer zone of at least 10 feet within the perimeter firelane? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
12. Have surface water diversion structures been constructed to accommodate a 100-year, 24-hour event? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	13. Has a waste profile been calculated according to Rule 908.b.6? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
14. Has facility design and engineering been provided as required by Rule 908.b.7? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	15. Has an operating plan been completed as required by Rule 908.b.8? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
16. Has ground water monitoring for the site been provided? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N ***Attach Water Analysis Report, Form 25, for each monitoring well installed.***	
17. Has financial assurance been provided as required by Rule 704? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	18. Has a closure plan been provided? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
19. Have local government requirements for zoning and construction been complied with? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	20. Have permits and notifications required by local governments and other agencies been provided? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Print Name: Daniel I. Padilla

Signed: _____

Title: Regulatory Advisor

Date: 2/16/10

OGCC Approved: _____ Title: _____ Date: _____

CONDITIONS OF APPROVAL, IF ANY:

Facility Number:

**COGCC FORM 28
CENTRALIZED E&P WASTE MANAGEMENT FACILITY
SUPPLEMENTAL INFORMATION**

**CENTRAL WATER HANDLING FACILITY
OXY USA WTP LP (Operator Number 66571)**

APRIL, 2010

This supplement to the Colorado Oil and Gas Conservation Commission (COGCC) Form 28 for OXY USA WTP, LP (Oxy's) proposed Central Water Handling Facility (CWHF) provides additional information required by COGCC Rules 704 and 908. This information is identified in the following sections by reference to the applicable section of Rules 704 and 908. This facility is also being permitted via a Limited Impact Review Permit (LIR) according to the Garfield County Planning Department in Garfield County, Colorado. As noted below, information required by Garfield County for the LIR has been provided with this application, where appropriate. In addition, as per COGCC rule 303.d.(2).A, because this facility is on a previously disturbed location with no additional disturbance proposed outside the original location, a COGCC Form 2A is not required for this facility.

As detailed in this application, Oxy's CWHF is intended to accommodate Oxy's requirement for disposal, storage, and reuse of produced water resulting from natural gas development activities in its Piceance Basin operations area. The proposed facility will facilitate the collection, storage, disposal and transfer of produced water from Oxy's natural gas wells. The primary use of the water will be for reuse in Oxy's natural gas drilling and completion operations. Any water that cannot be reused as part of Oxy's operations will be injected into salt water disposal wells that have been properly permitted with the COGCC, or taken to other appropriate disposal facilities.

Applications for permits for air emissions from the facility have also been secured from the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD). Oxy will comply with all applicable rules and regulations regarding air emissions of the holding tanks at the facility.

Rule 704.

An estimate of the cost for proper reclamation, closure and abandonment of the proposed facility is provided in Attachment P. As part of the COGCC approval process for this application, Oxy will provide the required financial assurance to the COGCC.

Rule 908.a.

The proposed facility is a non-commercial, centralized E&P waste management facility for the treatment, recycling, and beneficial reuse of E&P waste and will serve only Oxy's operations in their Piceance Basin operations area.

Rule 908.b.(1)

This facility will be operated for OXY USA WTP, LP. The information required by this rule is as follows:

Operator Name:	OXY USA WTP LP
Corporate Address:	P.O. Box 27757, Houston, Tx. 77227
Regional Address:	760 Horizon Drive, Suite 101, Grand Junction, CO 81506
Regional Phone:	970-263-3637
Regional Fax:	970-263-3694
Regional Contact Person:	Daniel Padilla

Rule 908.b.(2)

Oxy is the owner of the surface where this facility is located; therefore, no additional surface-owner authorization is required.

Rule 908.b.(3)

The legal description of the site is as follows:

A parcel of land situated in the SWSW, Section 29, Township 6 South, Range 97 West of the 6th Principal Meridian, Garfield County, Colorado.

OXY USA INC
PARCEL NUMBER 216921400026

SECT,TWN,RNG:21-6-97 DESC: SEC. 4 LOTS 9(40A) 16(40A) W1/2SW SEC. 5 LOTS 5 DESC: (40.14A)6(40.03A)7(39.91A)8(E 1.62A)9(40A)10(40 DESC: A) 11(40A) 12(40A) 13(40A) 14(40A) 15(40A) 16(40A) DESC: S1/2 SEC. 6 LOTS 14(E1/2 20A) 15(40A) 16(40A) 17 DESC: (E1/2 20A) E1/2W1/2SE, E1/2SE SEC8 E1/2, E1/2W1/2, DESC: SWNW, W1/2SW SEC 9 ALL SEC 15 ALL SEC 16 ALL SEC. DESC: 17 ALL SEC. 18 E1/2, SENW SEC. 19 NE, E1/2NW, DESC: E1/2W1/2NW, THAT PT OF SESE LYING BELOW THE MAHG. DESC: MKR.(NET 14.76A) SEC 20 ALL SEC 21 ALL SEC 22 ALL DESC: SEC. 28 N1/2, THAT PT OF THE S1/2 LYING ABOVE THE DESC: MAHG. MKR.(NET 165.4A) SEC. 29 ALL SEC. 30 THAT PT DESC: OF THE E1/2 & SW LYING BELOW THE MAHG.MKR.(NET 151 DESC: .84A) SEC 31 THAT PT OF LOTS 5,6,7 LYING BELOW THE DESC: MAHG. MKR.(NET 117.73A) SEC32 LOTS 1(54.85A)

2(54. DESC: 85A) 3(54.87A) 4(54.87A) SEC. 33 THAT PT OF LOTS 3 DESC: LYING ABOVE THE MAHG. MKR.(NET80.27A) SEC. 4-7-97 DESC: THAT PT OF TRS 78,79,80&81 LYING ABOVE MAHG. MKR. DESC: (42.7A) SEC. 5 THAT PT OF TRS 80(125.42A) 81(130A) DESC: LYING IN SEC. 5 TR 82(80.05A) 83(80A) SEC. 6 TR 84 DESC: (160A) 85(160A) 86(152.97A) 87(153.73A) SEC7 TR 88 DESC: (160A) 89(160A) 90(153.63A) 91(153.73A) AKA PT OF DESC: TRIUMPH 47, PT OF DENVER MINING CLAIMS 3,4,5,6, PT DESC: OF DERE 2,3,5,6 DENVER 43,44, PT OF DENVER 42,111, DESC: 112 DENVER 45-52 BK:0652

Rule 908.b.(4)

A topographic map of the location is provided in Figure 1 and Figure 2. The geology and hydrology of the site are described in further detail below. The average annual precipitation in the area of the facility is approximately 16.41 inches (Colorado Climate Center records for Altenbern Ranch station on Roan Creek, CO). The average annual evaporation rate in the area of the facility is approximately 45 inches (National Weather Service Evaporation Map of the United States). Additional details are provided in Attachment K of this submittal. This facility does not rely upon evaporation of water, therefore the annual precipitation and evaporation rates for the site are not applicable to the operation of this facility.

Rule 908.b.(5).A.

The site plan for the facility is provided in Attachment Q. This site plan identifies all of the features of the facility, including all proposed equipment. Construction and drainage details are also provided in the grading and drainage plans included in Attachment Q, sheets 2, 3, 4 & 5 of 6.

Rule 908.b.(5).B.

The Proposed Overall Site Plan drawing, contained in Attachment Q provides a survey plat for the proposed location identifying the distances to the nearest section lines.

Rule 908.b.(5).C.

Public access to the facility will be controlled by the security gate operated by Oxy on Conn Creek road (see topographic map contained in Attachment Q). The security gate is manned at all times to prevent unauthorized access to Oxy's facilities. All vehicular traffic entering this area must stop at this security gate where the vehicle's occupants must register. Access to the CWHF will also be control via wildlife friendly fencing and gates (see topographic map contained in Attachment Q). All storage for water and other liquids at this facility will be in closed-top tanks and all of the equipment supporting operations at this facility is enclosed so that access to the facility by wildlife or domestic animals will not be a concern.

Rule 908.b.(5).D.

Due to remote nature of the facility location, and the pre-existing disturbance of the location, Oxy is formally requesting a variance to Rule 908.b. (5)D. Oxy believes that the pre-existing disturbed area buffering the facility adequately satisfies the COGCC fire lane buffer requirement around centralized facilities. As demonstrated in the Site Plan and the aerial diagrams provided, Oxy's CWHF is characterized by a lack of vegetation both within the boundaries of the facility and in the area immediately surrounding the facility. In addition, Oxy has designed the CWHF to accommodate a minimum 10 foot fire buffer zone around the active treatment areas. The facility also has a system of roadways no less than 10 feet in width that will serve as fire lanes and allow multiple access routes to any location during a fire emergency. Finally, Oxy will implement industry Best Management Practices (BMPs) to assist in the prevention of wildfires. The BMPs applied to Oxy's wildfire prevention activities will be driven by three initiatives that are critical to Oxy's success in wildfire prevention:

- 1) Regulatory compliance to enhance fire suppression response.
- 2) Voluntary assessment of wildfire threat and risk to mitigate damage.
- 3) Standard industry practice(s) that reduces wildfire ignitions.

Based on the details noted above, Oxy believes this variance does not violate the basic intent of Rule 908.b(5).D. Please see the site diagrams contained in Attachment Q which provide additional details in support Oxy's justification for the requested variance.

Rule 908.b.(5).E.

The grading and drainage plans provided to Garfield County as part of the LIR application and included in Attachment Q of this application provide details of the surface-water diversion structures designed to accommodate the precipitation events prescribed by this rule. A representation of the Garfield County floodplain designations is included as Figure 7. As noted on this map, the area surrounding this facility is an area where no floodplain or floodway has been identified. Based on the elevation difference between the proposed site and Conn Creek, it is highly unlikely that a flood would impact this facility.

Oxy's Storm Water Management Plan (SWMP) is provided in Attachment F as part of the submittal for this facility.

Rule 908.b.(6).

Attachment G provides analytical data establishing a waste profile for the produced water anticipated to be treated by this facility. The information provided in Attachment G is as follows:

- A mass-flow balance for this facility representing anticipated monthly volumes for inflow and outflow.
- Analytical data for samples associated with typical inflows to the facility and analytical data for the outflow water.

Rule 908.b.(7).

The site plan for the facility and the grading and drainage plan (Attachment Q) provide details of the facility design and engineering. Attachment A provides a process-flow diagram and process description for the CWHF. The CWHF has been designed with numerous features to prevent spills or leaks from impacting the environment including (but not limited to) the implementation of Oxy's SWMP (see Attachment F) and SPCC plan (See Attachment E). In addition, Oxy's operational policies and procedures for this facility are designed to minimize risk to the environment and accommodate rapid response in the event of an accidental spill or release of fluids (see Attachment C).

Rule 908.b.(7).A.

A comprehensive report from the Natural Resources Conservation Service (NRCS) Colorado is provided in Attachment I and a report on geological hazards is provided in Attachment J. Figure 6 provides the soils map for this project. A generalized geologic map of the area is provided in Figure 5.

This location is primarily underlain by soils of the Happle very channery sandy loam with 3 to 12 percent slopes and Happle rock outcrop association with 25 to 65 percent slopes. The Happle very channery sandy loam soil type consists of an upper three feet layer of very channery sandy loam overlying several feet of extremely channery sandy loam. It is well drained with no frequency of flooding or ponding. The Happle rock outcrop association consists of an upper one foot of very channery sandy loam overlying several feet of very channery sandy clay loam, overlying several feet of extremely channery sandy loam. It is well drained with no frequency of flooding or ponding.

The location for the proposed facility is underlain by the lower part of the Green River Formation. This part of the Green River Formation consists of shale, mudstone and sandstones. The cliffs and plateau to the west of the location are comprised of the Parachute Creek Member of the Green River Formation and consist of oil shale, sandstone and mudstone. The rocks of the Green River Formation are the parent material for the soils that occur at this location.

The facility is located in the west-central part of Colorado on the Colorado Plateau, southwest of the White River geological uplift. Tertiary basalt flows cover much of the area south of the Colorado River. Glacial deposits are widely distributed throughout the upland areas, and alluvium and stream-laid gravel and boulders form a broad belt along the Colorado, Roaring Fork, and Crystal Rivers (USSCS, 1985). The facility is located about 25 miles west of the Grand Hogback which separates the Colorado Plateau physiographic province from the White River Plateau to the northeast and the Sawatch Range to the southeast (Tweto, 1979). The

Colorado Plateau is a relatively stable shelf area that contains thick sequences of sedimentary rocks ranging in age from the late Paleozoic through the Tertiary period (Press and Siever, 1974). The Colorado Plateau is punctuated with areas of Tertiary volcanic activity expressed by extrusive igneous deposits.

Bedrock at the facility consists of the Tertiary Wasatch and Green River formations. These formations consist of siltstone, sandstone, claystone, and conglomerate. The bedrock at the facility is covered by slope colluvium and stream alluvium of Conn Creek. This unconsolidated material is likely to vary in thickness to depths of tens of feet and will likely contain unconfined groundwater.

The geologic structures nearest the CWHF are the cliffs and plateau to the west of the location which are comprised of the Parachute Creek Member of the Green River Formation and consist of oil shale, sandstone and mudstone.

The proposed CWHF is situated to the west of Conn Creek on an alluvial fan formed at the base of a steep drainage off of the plateau to the west. No geologic hazards have been mapped by Garfield County in this area and no faults or other hazards are evident on the Geologic Map of Colorado. However, evidence of land instability is visible in proximity to the site. Rock fall from the canyon walls is common. The wide, shallow, and steep channels of streams and drainages experience flash flooding and occasional debris flow during prolonged or extreme storm events. The primary limitations identified for this location are based on the slopes, limited depth to bedrock and the potential for cutbanks to cave. These limitations are most pronounced to the northwestern portion of the site. The nearest perennial surface water feature is Conn Creek which flows north to south and is located adjacent to the proposed facility, however, numerous dry channels, including a relatively large drainage immediately to the west of the facility, transect the steep slopes to the west of the facility and will carry water during storm events. Geologic hazard potential is likely high to very high and consideration of rock fall and debris flow has been implemented in the design and operation of the facility.

As noted in the geologic hazards report, the primary issues posed by the soils and geology in the vicinity of the facility are the slopes (including potential for rockfall and debris flow), limited depth to bedrock and the potential for cutbanks to cave. Oxy has included consideration for all these issues during the design and construction of this facility. The existing layout of the facility and implementation of Oxy's SWMP BMPs ensures that slopes have been graded appropriately to minimize the potential for cutbank caving and reduce the risk associated with the possibility of rockfall.

Rule 908.b.(7).B.

A map of surface water features within two (2) miles of the proposed facility is provided in Figure 7. As noted on this figure, the facility is located approximately 480 feet northwest of Conn Creek and is approximately 210 feet in elevation above the creek. As discussed above, the facility is not within an area identified as a flood hazard by FEMA. No surface waters subject to COGCC Rule 317B are located in the vicinity of the proposed project (see Figure 4). The

location is not within an identified floodplain and is located at an elevation well above the nearest surface waters (see Figure 8). An assessment of potential impacts to wetlands and waters of the United States (US) according to Army Corps of Engineering (ACOE) standards found that the the proposed project will not have any impacts to wetlands, or adversely affect water quality in any nearby waterways (see Attachment M).

According to the Colorado Division of Water Resources database, there are no water wells within a 1 mile radius of the site boundary (see Figure 9). According to the Colorado Geological Survey's Groundwater Atlas of Colorado (Colorado Geological Survey, 2003) ground water withdrawal for specific basins or aquifers in this area is not generally available. Because the tertiary sedimentary rocks of the Piceance Basin are generally fine grained and well cemented there is very small hydraulic conductivity for the rock matrix. As a result, there is no measurable groundwater beneath the proposed facility and there is currently no use of groundwater as a drinking water source down gradient of the facility. If a well is drilled at within one mile this location and contains water, Oxy will attempt to obtain landowner permission to collect a sample from the well in order to provide for baseline water quality analysis.

Very few data are available regarding the hydrogeologic conditions in the vicinity of the facility. It is assumed that the general direction of flow for any shallow groundwater that might occur beneath the facility is to the south-southeast in a path that roughly approximates the path of the Conn Creek drainage. According to the Colorado Geological Survey's (CGS's) Ground Water Atlas of Colorado, both the Upper Piceance and Lower Piceance aquifers occur in this vicinity of this facility. The Mesa Verde Aquifer may be found at depth in this area, however, it would be overlain by a few to several thousand feet of relatively impermeable shales of the Wasatch Formation. The bedrock aquifers known as the upper and lower Piceance Basin aquifer systems are consolidated rock aquifers approximating the lower Tertiary Eocene in age. The upper and lower aquifers are separated by the Mahogany Zone of the Parachute Creek Member. The Mahogany Zone is a poorly permeable oil shale, which retards water movement but does not stop it. Both bedrock aquifers overlie the older Cretaceous Mesaverde Group.

The upper aquifer system is about 700 feet thick and consists of several permeable zones in the Eocene Uinta Formation and the upper part of the Parachute Creek Member of the Eocene Green River Formation. Sub-aquifers of the Uinta Formations are silty sandstone and siltstone, while those of the Parachute Creek Member of the Green River Formation are fractured dolomite marlstone. There is some primary porosity (i.e., the porosity preserved from during or shortly after sediment deposition, such as the spaces between grains) in the sandstone and the permeability of the sub-aquifers has been enhanced by natural fracturing that occurred during post-deposition deformation. Layers between the individual sub-aquifers are less permeable than the sub-aquifers themselves, but they do not prevent water movement between the sub-aquifers.

The lower aquifer system is about 900 feet thick and consists of a fractured dolomitic marlstone of part of the lower Parachute Creek Member of the Green River Formation. It is semi-confined

below the Mahogany Zone and above the Garden Gulch Member of the Green River Formation and a high resistivity zone just above it (USGS, 1984 and Taylor, 1987). Fracturing during deformation of the rocks and subsequent solution enlargement owing to dissolution of soluble evaporite minerals has increased permeability of this lower aquifer system. Groundwater is recharged from snowmelt on high ground from where it travels down through the upper aquifer system, the Mahogany Zone, and into the lower aquifer system. The groundwater then moves laterally and/or upward discharging from both the upper and lower aquifer systems into localized streams.

Wells in these two bedrock aquifer systems, the upper and lower Piceance Basin aquifers, typically range in depth from 500 to 2,000 feet and commonly produce between 2 to 500 gallons per minute of water (USGS, 1984). Detailed aquifer maps do not exist for the Piceance Basin, but water quality in the Piceance Basin is poor owing to nahcolite (sodium bicarbonate) deposits and salt beds within the basin (Graham, 2001).

As detailed below, Oxy is proposing to implement groundwater and surface water monitoring down gradient of the CWHF to monitor surface water conditions and to minimize the potential risk to alluvial aquifer(s).

The Oxy CWHF has been designed with a number of features that significantly reduce the potential for the facility to impact nearby surface and ground water. The discussion provided above under Rule 908.b.(7) details the secondary containment measures for the tank batteries and associated equipment, and the truck loading/unloading facilities. The entire facility is designed in way that the operators who will be onsite will be able to immediately identify and isolate the location of a spills, leaks, etc. In addition, the onsite operators will be trained to respond to any leaks or spills so that they will be quickly contained.

The operation of Oxy's CWHF will significantly reduce the amount of trucks required to transport produced water from Oxy's operations to production areas and offsite disposal facilities. This reduction of truck traffic also results in a significant reduction in the potential for a vehicle accident that results in discharge of produced water to the environment.

Rule 908.b.(7).C.

The site plan for the facility in and the grading and drainage plan (Attachment Q) provide engineering details for the facility. The discussion provided above under Rule 908.b.(7) details the secondary containment measures for the tank batteries and associated equipment, and the truck loading/unloading facilities.

Rule 908.b.(8).

An operating plan is provided in Attachment B and the Emergency Response/Contingency plan for the facility is provided in Attachment C.

Rule 908.b.(9).A.

There are no water wells located within one (1) mile of the proposed facility. This information results is summarized above under Rule 908.b.(7).B.

Rule 908.b.(9).B.

As discussed above under Rule 908.b.(7).B., the CWHF has been designed with a number of features that significantly reduce the potential for this facility to impact groundwater. In addition to the engineering and operational components of the CWCF that will mitigate the risk to impacts to surface or groundwater, Oxy is proposing install two (2) groundwater monitoring wells down gradient from the proposed facility. Because of the steep topography and the typical flow of groundwater in the area, Oxy is not proposing to install monitoring wells up gradient from the facility. Additionally, Oxy will perform surface water sampling and monitoring at two locations along Conn Creek, one up gradient and one down gradient from the proposed location. Oxy has provided a groundwater monitoring plan as Attachment H to this submittal. Figure 11 identifies the proposed locations for ground water monitoring and surface water sampling.

Rule 908.b.(10).

Oxy will perform surface water sampling and monitoring at two locations along Conn Creek, one up gradient and one down gradient from the proposed location. Oxy proposes to perform surface water sampling at these locations quarterly for the first year after issuance of the COGCC permit and biannually thereafter if there are no deviations in water quality attributable to the operation of the CWHF. Figure 11 identifies the proposed locations for surface water sampling.

Rule 908.b.(11).

Oxy's Emergency Response Plan, including contingency planning for the facility is provided in Attachment C.

Rule 908.c.

No response required.

Rule 908.d.

An estimate of the cost for proper reclamation, closure and abandonment of the proposed facility is provided in Attachment P. As part of the application approval process for the CWHF, Oxy will provide the required financial assurance to the COGCC.

Rule 908.e.

Throughout the life of the facility, Oxy shall submit proposed modifications to the facility design, operating plan, permit data, or permit conditions to the Director for prior approval.

Rule 908.f.

To facilitate the annual review of this facility by the COGCC, Oxy shall submit an annual report summarizing operations, including the types and volumes of waste actually handled at the facility.

Rule 908.g.

A preliminary plan for reclamation and closure of the facility is provided in Attachment O. As noted above, an estimate of the cost to close and reclaim the facility is provided in Attachment P. Oxy has prepared a COGCC Form 3 for this project that reflects the amount detailed in Attachment Q, Reclamation Cost Estimate.

Rule 908.h.

This facility is also being permitted via a Limited Impact Review (LIR) application with Garfield County. The LIR application was submitted to the Garfield County Planning Department on i February 12, 2010.

**OXY USA WTP LP
CENTRAL WATER HANDLING FACILITY (CWHF)**

**RESPONSE TO COGCC COMMENTS ON FORM 28 SUBMITTAL
(Ref. - Letter from Chris Canfield, COGCC, Dated August 5, 2009)**

Form 28, Attachment List - Please complete the attachment checklist.

A revised Form 28 with the attachment checklist completed is enclosed.

Form 28, 1. Is the site a sensitive area? Answer No. The existing Oxy facility and proposed CWHF facility are located within COGCC Sensitive Wildlife Habitat. As part of the Form 28 submittal, Oxy included a study conducted by WestWater Engineering (May 2009) entitled "Wildlife and Sensitive Areas Report, Oxy Water Treatment and Storage Facility, Garfield County, Colorado". WestWater indicated that the existing facility is located within wildlife sensitive areas and provides a list of mitigation measures for maintenance and improvement of wildlife habitat, quality and prevention of human-caused impacts to resources. Will these mitigation measures be implemented following construction activities for the CWHF facility?

The response to this question requires a differentiation between the criteria for a "sensitive wildlife area" and a "sensitive area".

The fact that the report provided by Westwater Engineering indicates the existing facility is located within sensitive wildlife areas does result in this facility meeting the COGCC's definition of a sensitive wildlife area, therefore, the answer to Item 1 of the Form 28 has been changed to "Yes". This can be confirmed by reviewing the proposed location for the CWHF using the COGCC's mapping website. It should be noted however, as per COGCC rule 303.d.(2).A, because this facility is on a previously disturbed location with no additional disturbance proposed outside the original location, a COGCC Form 2A (and the associated Colorado Division of Wildlife consultation) is not required for this facility. In addition, Oxy is committed to implementing the wildlife mitigation measures identified in the Westwater report during construction, operation and maintenance activities for the CWHF facility.

According to the COGCC definition of a "sensitive area", because the CWHF is in proximity to Conn Creek the proposed facility is located within a "sensitive area". As detailed in the Form 28 Supplemental Information for Rule 908.b.(9).B. and 908.b.(10), the CWHF has been designed with a number of features that significantly reduce the potential for this facility to impact groundwater and surface waters. In addition to the engineering and operational components of the CWHF that will mitigate the risk to impacts to surface or groundwater, Oxy is proposing install two (2) groundwater monitoring wells down gradient from the proposed facility. Oxy will also perform surface water sampling and monitoring at two locations along Conn Creek, one up gradient and one down gradient from the proposed location, therefore, a sensitive area determination is not required.

**Form 28, 2. What Is the average annual precipitation and evaporation rates for the site?
Answer: 14Inches/year and 45 Inches/year, respectively.**

The document prepared by WestWater Engineering (May 2009) entitled "Wildlife and Sensitive Areas Report, Oxy Water Treatment and Storage Facility, Garfield County, Colorado" indicates that the closest gauging station to the Site is the Altenbern Ranch station on Roan Creek which has been recording measurements since 1948. The average annual rainfall at the Altenbern

Ranch station is 16.41 inches/year, Please provide the source for date for you estimate of 14 inches/year. Please provide the source for your estimate rate of 45 inches/year for the Site.

Oxy has modified the precipitation rate in Item 2 of the Form 28 to reflect the NOAA data referenced in the report noted above. The estimate for pan evaporation rate was determined by using the Class A Evaporation Map prepared by the National Weather Service (NOAA Technical Report NWS 33). The supporting data is provided in Attachment K.

Form 28, 9. What measures have been implemented to limit access to the facility by wildlife, domestic animals or by members of the public? Answer: Guard station and/or locked gate located at Oxy's property boundary; wildlife friendly surrounds the perimeter of the facility.

Please define "wildlife friendly"

OXY's fencing is constructed according to the Colorado Division of Wildlife's definition of wildlife friendly fencing. Specifically, it is constructed at a total height of less than 42 inches with at least 12 inch spacing between the top two wires. Access controls for the site are intended to limit access by wildlife, domestic animals, livestock and the public. Entry to the site is controlled via OXY's guard shack which is monitored 24 hours per day. Additional access controls for the site are in the form of lockable gates which adjoin the wildlife friendly fencing. The site diagrams provided in Attachment R of this submittal provide details and locations of these access controls.

Form 28, 10. Is there a planned fire lane of at least 10 feet in width around the active, treatment areas and within the perimeter fence? Answer: No.

Please provide justification for variance of Rule 908.b.(5).D.

Due to remote nature of the facility location, and the pre-existing disturbance of the location, Oxy is formally requesting a variance to Rule 908.b.(5)D. Oxy believes that the pre-existing disturbed area buffering the facility adequately satisfies the COGCC's fire lane buffer requirement around centralized facilities. As demonstrated in the Site Plan and the aerial diagrams provided, Oxy's CWHF is characterized by a lack of vegetation both within the boundaries of the facility and in the area immediately surrounding the facility. In addition, Oxy has designed the CWHF to accommodate a minimum 10 foot fire buffer zone around the areas associated with the activities required to operate this facility. The facility will benefit from a system of roadways no less than 10 feet in width that will serve as fire lanes and allow multiple access routes to any location during a fire emergency. Finally, Oxy will implement industry Best Management Practices (BMPs) to assist in the prevention of wildfires. The BMPs applied to Oxy's wildfire prevention activities will be driven by three initiatives that are critical to Oxy's success in wildfire prevention:

- 1) Regulatory compliance to enhance fire suppression response.*
- 2) Voluntary assessment of wildfire threat and risk to mitigate damage.*
- 3) Standard industry practice(s) that reduces wildfire ignitions.*

Based on the details noted above, Oxy believes this variance does not violate the basic intent of Rule 908.b(5).D. Please see the site diagrams contained in Attachment R which provide additional details in support Oxy's justification for the requested variance.

Form 28, 11. Is there an additional buffer zone of at least 10 feet within the perimeter fire lane? Answer: No

Please provide justification for variance of Rule 908.b.(5).D.

As noted above, Oxy is formally requesting a variance to Rule 908.b.(5)D. Oxy's CWHF is characterized by a lack of vegetation both within the boundaries of the facility and in the area immediately surrounding the facility. In addition, Oxy has designed the facility to accommodate a minimum 10 foot fire buffer zone around the active treatment areas for the entire facility. Maintenance of the (minimum) 10 foot buffer zone will be augmented by implementation of wildfire prevention BMPs to reduce the risk wildfires.

Form 28, 16. Has groundwater monitoring for the site been provided? Answer: No.

Unless Oxy elects to install dual liners with leak detection system for holding ponds, please provide a plan for construction of a monitoring well network and a groundwater monitoring plan, for the Site (Rule 908.b.(9).B.i.,ii.).

Oxy does not intend to construct any holding ponds for the CWHF. Any references to water storage ponds have been removed from the updated Form 28 COGCC submittal. In order to mitigate any possible impacts to groundwater in the area, Oxy intends to install two (2) groundwater monitoring wells down gradient from the proposed facility. Because of the steep topography and the typical flow of groundwater in the area, Oxy is not proposing to install monitoring wells up gradient from the facility. Additionally, Oxy will perform surface water sampling and monitoring at two locations along Conn Creek, one up gradient and one down gradient from the proposed location. Oxy has provided a groundwater monitoring plan as Attachment H to this submittal. Oxy proposes to perform surface water sampling at these locations quarterly for the first year after issuance of the COGCC permit and biannually thereafter if there are no deviations in water quality attributable to the operation of the CWHF.

Form 28, 17. Has financial assurance been provided as required by Rule 704? Answer: No.

Please provide a detailed site-specific estimate for costs associated with the closure/abandonment/reclamation for the - treatment, storage and/or re-use alternative - that Oxy selects for use at the CWHF. The cost estimate shall include costs associated with worst case scenarios including spills/release(s) from the facilities, managing the impacted soils et al.

Oxy has provided the cost estimate data in Attachment Q of this submittal.

Form 28, 18. Has a closure plan been provided? Answer: Yes

Please provide a preliminary detailed site-specific Closure Plan [Rule 908.g.(1)] for the treatment, storage and/or re-use alternative facilities - that Oxy selects for use at the CWHF.

Oxy has provided the Closure (Reclamation) Plan in Attachment P of this submittal.

Form 28, 20. Have permits and notifications required by local governments and other agencies been provided? Answer: Yes

Please provide copies of all permits and notifications required by local government and other agencies as an appendix to the Form 28 submittal.

Oxy has provided the copies of applications and notifications required by local government and other agencies as Attachment S of this submittal.

Form 28 Supplement, Rules 902 and 904

The supplement indicates that produced water may be "sent to produced water storage ponds for future reuse or disposal" (page 2. first paragraph, fifteenth line of submittal). Do these facilities currently exist on property? If so, and Oxy plans to include these ponds into the CWHF facility please provide documentation regarding the construction, permitting and monitoring of the existing ponds to demonstrate that they meet the requirements of produced water pits as outlined in Rules 902 and 904. If constructed before April 1, 2009, please provide documentation to demonstrate that the ponds comply with the rules in effect at the time of construction.

Oxy does not intend to construct any holding ponds for the CWHF. Any references to water storage ponds have been removed from the updated Form 28 COGCC submittal.

Form 28 Supplement, Rule 908.b.(3).

Please insert the legal description for the property (included on footer on drawing entitled Proposed Overall Site Plan by Uintah Engineering and Land Surveying [File No. 2.3.1.6.6; 05/13/09]) in the text for the Form 28 submittal.

Oxy has provided the legal description on the Proposed Overall Site Plan drawing included in Attachment R of this submittal. In addition, the legal description is provided below:

A parcel of land situated in the SWSW, Section 29, Township 6 South, Range 97 West of the 6th Principal Meridian, Garfield County, Colorado.

OXY USA INC
PARCEL NUMBER 216921400026

SECT,TWN,RNG:21-6-97 DESC: SEC. 4 LOTS 9(40A) 16(40A) W1/2SW SEC. 5 LOTS 5 DESC: (40.14A)6(40.03A)7(39.91A)8(E 1.62A)9(40A)10(40 DESC: A) 11(40A) 12(40A) 13(40A) 14(40A) 15(40A) 16(40A) DESC: S1/2 SEC. 6 LOTS 14(E1/2 20A) 15(40A) 16(40A) 17 DESC: (E1/2 20A) E1/2W1/2SE, E1/2SE SEC8 E1/2, E1/2W1/2, DESC: SWNW, W1/2SW SEC 9 ALL SEC 15 ALL SEC 16 ALL SEC. DESC: 17 ALL SEC. 18 E1/2, SENW SEC. 19 NE, E1/2NW, DESC: E1/2W1/2NW, THAT PT OF SESE LYING BELOW THE MAHG. DESC: MKR.(NET 14.76A) SEC 20 ALL SEC 21 ALL SEC 22 ALL DESC: SEC. 28 N1/2, THAT PT OF THE S1/2 LYING ABOVE THE DESC: MAHG. MKR.(NET 165.4A) SEC. 29 ALL SEC. 30 THAT PT DESC: OF THE E1/2 & SW LYING BELOW THE MAHG.MKR.(NET 151 DESC: .84A) SEC 31 THAT PT OF LOTS 5,6,7 LYING BELOW THE DESC: MAHG. MKR.(NET 117.73A) SEC32 LOTS 1(54.85A) 2(54. DESC: 85A) 3(54.87A) 4(54.87A) SEC. 33 THAT PT OF LOTS 3 DESC: LYING ABOVE THE MAHG. MKR.(NET80.27A) SEC. 4-7-97 DESC: THAT PT OF TRS 78,79,80&81 LYING ABOVE MAHG. MKR. DESC: (42.7A) SEC. 5 THAT PT OF TRS 80(125.42A) 81(130A) DESC: LYING IN SEC. 5 TR 82(80.05A) 83(80A) SEC. 6 TR 84 DESC: (160A) 85(160A) 86(152.97A) 87(153.73A) SEC7 TR 88 DESC: (160A) 89(160A) 90(153.63A) 91(153.73A) AKA PT OF DESC: TRIUMPH 47, PT OF DENVER MINING CLAIMS 3,4,5,6, PT DESC: OF DERE 2,3,5,6 DENVER 43,44, PT OF DENVER 42,111, DESC: 112 DENVER 45-52 BK:0652

Form 28 Supplement, Rule 908.b.(4).

Please include references for the precipitation and evaporation rates provided for the Site.

Precipitation data for the Altenbern Ranch station on Roan Creek is available from the Colorado State University Colorado Climate Center. A link to the data website is provided below. See additional detail in Attachment K.

<http://ccc.atmos.colostate.edu/cgi-bin/mlydb.pl>

The estimate for pan evaporation rate was determined by using the Class A Evaporation Map prepared by the National Weather Service, NOAA Technical Report NWS 33. See additional detail in Attachment K.

Form 28 Supplement, Rule 908.b.(5).A.

Please revise Figures 1 through 8 as necessary to address the following.

- Update the drawings to illustrate the final location and method(s) selected for treatment, storage and/or re-injection of produced water at the CWHF facility.

The drawings have been updated to include labeling to reflect the location and method(s) for treatment of the produced water, storage tanks and the location of the injection well(s).

- Identify the boundary of the proposed CWHF within the existing OXY facility. Use separate color of line texture to distinguish between existing facilities on the property and those proposed to be used for the CWHF.

The drawings have been updated to include the boundary of the proposed CWHF. The drawings have also been updated to differentiate the facilities that will be utilized for the CWHF.

- Identify the location of the specific proposed elements within the CWHF, including gravity separation above ground storage tanks (ASTs), treatment units, filter equipment, settling and storage AST batteries, and amendment process equipment for surface discharge, as well as “ancillary infrastructure” such as electrical panels, pump houses, control/monitoring facilities and secondary containment structures for each of the ASTs. Identify the volume, contents and purpose for each of the existing/proposed ASTs on the Site.

See drawings in Attachment R for the details requested above.

- Identify where produced water will enter the CWHF, including incoming pipelines and truck unloading facilities. Identify the location of the ponds as well as the pipelines or trucking routes between the CWHF and the ponds.

See drawings in Attachment R for the details requested above. Blue lines on the drawings represent the both the inflow and outflow pipelines serving the facility. Additionally, Figure 3 represents the roadways that will be utilized by trucks bringing produced water to the facility from areas not serviced by pipelines. Oxy does not intend to construct any holding ponds for the CWHF. Any references to water storage ponds have been removed from the updated COGCC submittal.

- Provide drawings illustrating the design of the ponds and secondary containment features.

See drawings in Attachment R for the details of the secondary containment features. Additional details specific to the secondary containment for this facility are included in Oxy's SPCC contained in Attachment E. Oxy does not intend to construct any holding ponds for the CWHF. Any references to water storage ponds have been removed from the updated COGCC submittal.

- Identify where treated water will leave the CWHF, including proposed truck loading areas, pipelines leading to the salt water disposal wells, and the location of the discharge pipeline and proposed out fall to Conn Creek.

Oxy does not propose to discharge any water from the CWHF to Conn Creek. See drawings in Attachment R for the details requested above.

- Please provide the coordinates for the injection wells that OXY proposes to use to dispose of produced water and the location of the pipelines or trucking routes used between the CWHF and the injection well(s).

The coordinates for the two injection well locations are:

Injection well #1

Cascade Creek 629-1

SWSW Sect 29 T6S R97W 6th Meridian

Injection well #2:

Logan Trail 28-10

NESE Sect 28 T7S R97W 6th Meridian

See Figure 3 for the details of the pipelines and/or trucking routes used for transport of water to these locations.

Form 28 Supplement, Rule 908.b.(5).C.

Please provide a scaled drawing illustrating the location of the guard station/locked gate on OXY's private road. Indicate how access will be limited through use of the guard station/locked gate. Demonstrate measures to prevent someone from accessing the site by driving around the checkpoint or entering on foot. Update the drawings to illustrate the location of all fencing. Please define "wildlife friendly" fencing and distinguish between wildlife friendly and other types of fencing on the Site.

OXY has proposed using ponds for storage of treated water. Please provide a scaled drawing indicating the location of the ponds and secondary containment features for ASTs. Provide detailed construction information and drawings for the ponds and secondary containment facilities. Describe what measures will be or currently are in use to prevent access to the ponds by wildlife or domestic animals.

See Attachment R, topographic map labeled "B Topo" for the details of the guard station and gate. Oxy's security personnel are on duty from 24 hours per day at the guard station and will challenge anyone that attempts to circumvent the gates and fencing which control access to the facility. Oxy's gates and fences are constructed according to industry standards for access

control in order to prevent individuals from gaining access by driving around the checkpoint. Oxy personnel are trained to challenge any individual and contact security if that individual is not recognized as an Oxy employee or contactor.

Details specific to “wildlife friendly” fencing are provided above.

Oxy does not intend to construct any holding ponds for the CWHF.

Form 28 Supplement, Rule 908.b.(5).D.

OXY has requested a variance to Rule 908.b.(5)D because the facility will be constructed on an existing disturbed area that OXY believes will satisfy the fire lane and buffer zone requirements. If the variance is not granted, please provide a scaled drawing indicating the location of the perimeter fence, 10-foot perimeter fire lane, and 10-foot interior buffer zone around active treatment areas.

Based on the details noted above in response to the COGCC request for additional details (regarding FORM 28 line 10), Oxy believes the requested variance does not violate the basic intent of Rule 908.b.(5).D. If the requested variance to Rule 908.b.(5)D is not approved, Oxy will provide the appropriate drawings to reflect the details requested.

Form 28 Supplement, Rule 908.b.(5).E.

Please provide an amended/revised and approved Stormwater Management Plan for the Site that incorporates the final layout of the proposed CWHF. Include a copy of this plan as an appendix to the Operating Plan for the facility. Demonstrate that the current/proposed ditches, catchment basins and berms will accommodate a one hundred (100) year, twenty four (24) hour event. Demonstrate that the facility is designed with a run-on control system that will prevent flow onto the facility during peak discharge. Demonstrate that the facility is designed with a runoff control system to contain the water volume from a twenty-five (25) year, twenty-four (24) hour storm.

The Stormwater Management Plan (SWMP) associated with permit no. COR 038414 has been updated to reflect the details of the CWHF and is provided as a (separate) Attachment F to this document. Typically the SWMP is a standalone document with copies available for use at all Oxy operational facilities. The attached site diagrams (Attachment R, sheets 3, 4 and 5 of 6) prepared by Uintah Engineering and Land Surveying demonstrates the pre and post construction grading, catchment basins and berms designed to accommodate 100 year and 24-hour drainage flows. The site has been designed to not significantly impact the drainage patterns for this area. The attached drainage report from Nolte (see Attachment F) demonstrates the drainage from the CWHF site will be accommodated within the capacity limits of OXY’s drainage infrastructure.

Form 28 Supplement, Rule 908.b.(6).

Providing the types and estimated monthly average volume of wastes generated at the proposed CWFNCC facility. Provide the characteristic waste profile for each waste stream. Provide a flowchart that demonstrates mass balance for monthly average volume of produced water received at the CWHF facility

- treated for discharge to Conn Creek
- stored in ponds for re-use
- re-injected via an on-site salt water disposal well
- hauled off Site for re-use, storage or injection

Please provide a waste profile and proposed means for proper disposal of any by product (e.g., solid brine) of the treatment of produced water for discharge to surface water. Provide an estimate of the volume of waste generated from the treatment process and the proposed plan for proper disposal.

Oxy's operation of the CWHF does not anticipate any discharge of water to the surface or to the surface waters. The estimated monthly volumes associated with inflows and outflows for the CWHF are provided in the Mass Balance data (see Attachment G).

Please provide a map illustrating location of the proposed salt water disposal injection well (page 4, first paragraph, seventeenth line). When constructed please provide a copy of the permit, the lithologic log and the well construction log for the water disposal injection well as an appendix to the Operating Plan for the CWHF facility. Provide an estimate of the daily/monthly volume of waste injected into this well.

A copy of the COGCC approved permit for the injection wells has been provided in Attachment O submitted with this document. The functional details of the injection wells including estimated volumes of water disposal are included in the permits. Additional details regarding the anticipated flows to Oxy's injection wells are included in the Mass Balance data (see Attachment G). The locations of the injection wells are demonstrated on Figure 3.

Form 28 Supplement, Rule 908.b.(7).

Please provide clarification of the following elements of the process description.

- Update the Facility Design and Engineering (FDE) data and the Operating Plan (OP) to indicate which of the two proposed treatment locations and methods has been selected by OXY and provide a detailed description of the selected location and treatment processes. The following comments refer to the FDE and OP sections within the submittal.

Oxy no longer intends to implement the compartmentalized (distillation) water treatment units at the CWHF. The Form 28 submittal document has been updated to remove any references to utilizing the compartmentalized water treatment units.

- The Project Description section (page 2, paragraph one) indicates that "treated produced water" would be either: transported off-site for re-injection; sent to produced water storage ponds for re-use or disposal; treated for re-use; or treated for surface water discharge. These statements are unclear. When you refer to "treated produced water" are you referring to produced water whose petroleum components have been removed; or produced water that has been treated to remove dissolved salts such that the water can be discharged to Conn Creek? Please define and distinguish between each in your subsequent submittal. Also, be clear on the scenarios, type of treatment and average monthly volumes for methods proposed to be utilized.

Since Oxy no longer intends to implement the compartmentalized (distillation) water treatment units at the CWHF, discharge of treated produced water to the Conn Creek watershed is no longer at issue. Oxy's reference to "treated produced water" is exclusive to the water which has passed through gravity separation tanks and then treated via a series of filters and a 2-phase separator.

- The FDE and OP sections describe several existing elements at the Site that are proposed to be used as part of the produced water treatment system. Please indicate on

the updated drawings which existing equipment/components on the Site will be used as part of the CWHF facility.

Updated drawings of the CWHF facility which differentiate between existing and proposed equipment are provided in Attachment R of this submittal.

- The FOE section indicates that the existing gravity separation AST system (comprised of settling and storage tanks) utilized for recycling water will be replaced by the proposed treatment process. The same section indicates that water will be delivered to the proposed treatment process from the existing settling and storage AST system. Please clarify whether the "gravity separation" and "settling and storage" AST systems are the same or separate. Please indicate if installation of the proposed treatment process will result in the removal or decommissioning of the gravity separation AST system, and if not, what the new role of those tanks will be.

The existing gravity separation systems being employed by Oxy for treatment of fluids will not be removed or replaced. The gravity separation systems employed at the pad sites provide the initial treatment of water before it is delivered to the CWHF facility. Prior to transport of water to the treatment facility, residual oil or condensate will be allowed to separate by gravity from the produced water and then removed via a series of gravity separator tanks on the well pads. After the first stage of residual oil/condensate removal at the well pads, the water will be transported to the facility. After the water is transported to the facility, it will be stored in tanks configured to allow for additional gravity separation followed by treatment through a series of filters and an additional 2-phase separator.

- FDE section indicates that the incoming produced water will go through a gravity separation AST system comprised of settling and storage tanks prior to the proposed treatment process. The OP section indicates that the produced water will go through the gravity separation system, then through a series of filters and a 2-phase separator, then into a second series of settling tanks prior to the proposed treatment process. Please indicate which process will be utilized.

As noted above, the water will be exposed to an initial gravity separation system at each pad location. The water will then be transported to the CWHF facility for and stored in another battery of gravity separation tanks prior to being passed through a series of filters and a 2-phase separator.

- The OP section indicates that OXY currently generates 1,000 barrels per day (bpd) of produced water and that "soon OXY plans to dispose of its current 1,000 bpd produced water production through underground injection". Is the proposed CWHF intended to be a temporary facility until injection of the produced water can begin? Will produced water be injected underground before or after treatment?

Both of the injection wells that are associated with the use of the CWHF are already permitted via the COGCC; Oxy intends to make use of the wells immediately. Depending upon the rate at which water is being generated and utilized through Oxy's field of operations, water will be pumped into the injection well or Oxy may truck some water to disposal sites. The produced water will be injected underground after being passed through the battery of tanks and facilities detailed in the Process Description document

(see Attachment A), in strict accordance with the COGCC permitting details for the injection wells. Details of the volumes associated with Oxy's utilization of the injection wells and possible disposal are provided in the Mass Balance diagram in Attachment G.

- If the "field water gathering system" referred to in the FDE section refers to a different source of water than "produced water" from Individual wells, the distinction needs to be made clear. Under the FDE section, it indicates that produced water is brought from the well pads and stored in four existing ASTs, While water from the field water gathering system is first treated by a two phase separator and a filter array before entering the storage ASTs. If the two sources are in fact the same source, it needs to be made clear whether they are treated by the two-phase separator or not before entering the storage ASTs.

The field water gathering system delivers produced water from Oxy well pad locations to the CWHF facility for treatment as detailed above.

- The FDE section indicates that amendments need to be added to the produced water that is treated prior to discharge to Conn Creek. Please describe type of amendments necessary prior to discharge, as well as sampling methods to confirm that the amended water meets the CDPHE guidelines. Please provide detail for monitoring/recording total discharge of treated water to Conn Creek.

Since Oxy no longer intends to implement the compartmentalized (distillation) water treatment units at the CWHF, discharge of treated produced water to the Conn Creek watershed is no longer at issue.

- Please describe methodology for loading/unloading of tanker trucks carrying produced water and all spill containment measures.

The truck loading/unloading area has been designated near the storage tank battery. This area will consist of a flat surface that will be graded to limit off flows and to contain any leaks or spills. The manifold where hoses from the trucks will be connected shall be contained in specially designed secondary containment tubs (vacuum sumps) so that liquids being loaded or unloaded will be contained within the secondary containment in order that potential leaks or spills will be contained. Oxy has provided the corporate procedures and methodologies for truck loading/unloading in Attachment D of this submittal.

- Please illustrate how produced water pipelines will deliver water to the CWHF facility.

A drawing detailing the pipelines connected to the field water gathering system which delivers produced water to the CWHF is provided in Attachment R of this submittal. Both the inflow and outflow pipelines are identified in the attached drawings as blue lines.

- The FDE section indicates that all ASTs will be placed within secondary containment. Please provide written details and drawings to illustrate the secondary containment facilities for each AST.

Details of the secondary containment for all ASTs are provided on the drawings contained in Attachment R and in Oxy's SPCC plan in Attachment E.

- OXY has indicated that they may eventually beneficially reuse or dispose of up to 8,000 bpd of produced water. Please provide a mass balance process and flow diagram to illustrate all incoming sources of produced water, each of the facility processes, and each of the eventual waste streams, with accompanying estimated volumes for each step.

Mass balance and flow diagrams for the proposed CWHF are provided in Attachment G and as part of the process description provided in Attachment A.

- The document describes several improvements to the facility that are not relevant to the Centralized E&P Waste Management Facility permit application. These improvements include construction of adjacent lay-down and storage yards, warehouses, the "slug catcher", trash facilities, etc. Please edit the document to describe only those processes and facilities which are included in the operations of the CWHF.

The submittal document has been updated to remove processes and facilities which are not included in the operations of the CWHF.

Form 28 Supplement. Rule 908.b.(7).A.i.

Please indicate the thickness of unconsolidated soils beneath the CWHF. Provide the lithologic information gathered from the construction of a groundwater monitoring well network for the facility.

The requested soils data has been provided in a custom Natural Resources Conservation Service (NRCS) soils report that is attached to this document. This location is primarily underlain by soils of the Happle very channery sandy loam with 3 to 12 percent slopes and Happle rock outcrop association with 25 to 65 percent slopes. The Happle very channery sandy loam soil type consists of an upper three feet layer of very channery sandy loam overlying several feet of extremely channery sandy loam. It is well drained with no frequency of flooding or ponding. The Happle rock outcrop association consists of an upper one foot of very channery sandy loam overlying several feet of very channery sandy clay loam, overlying several feet of extremely channery sandy loam. It is well drained with no frequency of flooding or ponding.

Form 28 Supplement, Rule 908.b.(7).A.ii.

Please indicate the depth to and thickness of consolidated bedrock beneath the CWHF.

The requested data has been provided in a custom NRCS soils report that is attached to this document. The location for the proposed facility is underlain by the lower part of the Green River Formation. This part of the Green River Formation consists of shale, mudstone and sandstones. The cliffs and plateau to the west of the location are comprised of the Parachute Creek Member of the Green River Formation and consist of oil shale, sandstone and mudstone. The rocks of the Green River Formation are the parent material for the soils that occur at this location.

The facility is located in the west-central part of Colorado on the Colorado Plateau, southwest of the White River geological uplift. Tertiary basalt flows cover much of the area south of the Colorado River. Glacial deposits are widely distributed throughout the upland areas, and alluvium and stream-laid gravel and boulders form a broad belt along the Colorado, Roaring

Fork, and Crystal Rivers (USSCS, 1985). The facility is located about 25 miles west of the Grand Hogback which separates the Colorado Plateau physiographic province from the White River Plateau to the northeast and the Sawatch Range to the southeast (Tweto, 1979). The Colorado Plateau is a relatively stable shelf area that contains thick sequences of sedimentary rocks ranging in age from the late Paleozoic through the Tertiary period (Press and Siever, 1974). The Colorado Plateau is punctuated with areas of Tertiary volcanic activity expressed by extrusive igneous deposits.

Bedrock at the facility consists of the Tertiary Wasatch and Green River formations. These formations consist of siltstone, sandstone, claystone, and conglomerate. The bedrock at the facility is covered by slope colluvium and stream alluvium of Conn Creek. This unconsolidated material is likely to vary in thickness to depths of tens of feet and will likely contain unconfined groundwater.

Please see the Form 28 Supplement document responses to Rule 908.b.(7).A.ii. which accompanies this submittal for additional details regarding the depth to and thickness of consolidated bedrock.

Form 28 Supplement, Rule 908.b.(7).A.iii.

Please describe and illustrate the location(s) of local/regional geologic structures near the CWHF.

The requested data has been provided in a custom NRCS soils report that is attached to this document. The geologic structures nearest the CWHF are the cliffs and plateau to the west of the location which are comprised of the Parachute Creek Member of the Green River Formation and consist of oil shale, sandstone and mudstone.

Form 28 Supplement, Rule 908.b.(7).A.iv.

Please determine whether there are any geologic hazards that may affect the design and operation of the CWHF.

The requested data has been provided in a Geologic Hazards and Soils report and a custom NRCS soils report that is attached to this document. No geologic hazards have been mapped by Garfield County in this area and no faults or other hazards are evident on the Geologic Map of Colorado. However, evidence of land instability is visible in proximity to the site. Rock fall from the canyon walls is common. Geologic hazard potential is likely high to very high and consideration of rock fall and debris flow will be considered in the design and construction of the facility.

Form 28 Supplement, Rule 9011.b.(7).B.i.

Please describe and illustrate the location of all surface water features within 2.0 miles of the proposed CWHF.

The requested surface water features map has been provided as an attachment to this document (see Figure 7).

Form 28 Supplement, Rule 9011.b.(7).B.ii.

Please determine the depth to shallow (unconfined) groundwater beneath the proposed CWHF. Please provide discussion on use of groundwater hydraulically down gradient of the facility as a drinking water source (i.e. aquifer).

According to the Colorado Division of Water Resources database, there are no water wells within a 1 mile radius of the site boundary (see Figure 9). According to the Colorado Geological Survey's Groundwater Atlas of Colorado ground water withdrawal for specific basins or aquifers in this area is not generally available. Because the tertiary sedimentary rocks of the Piceance Basin are generally fine grained and well cemented there is very small hydraulic conductivity for the rock matrix. As a result, there is no measurable groundwater beneath the proposed facility and there is currently no use of groundwater as a drinking water source down gradient of the facility.

Form 28 Supplement, Rule 908.b.(7).B.iii.

Please provide the location, total depth, depth to water, yield, screened interval and screened water bearing zone (aquifer) name for all water wells within a 1-mile radius of the site boundary.

According to the Colorado Division of Water Resources database, there are no water wells within a 1 mile radius of the site boundary (see Figure 9). The requested water wells map has been provided as an attachment to this document. According to the Colorado Geological Survey's (CGS's) Ground Water Atlas of Colorado, both the Upper Piceance and Lower Piceance aquifers occur in this vicinity of this facility. The Mesa Verde Aquifer may be found at depth in this area, however, it would be overlain by a few to several thousand feet of relatively impermeable shales of the Wasatch Formation.

Form 28 Supplement, Rule 908.b.(7).B.iv.

Please provide the hydrologic properties of the shallow water-bearing soils and groundwater aquifers located beneath the proposed CWHF. Please provide the depth to potentiometric surface, direction of groundwater flow, and the rate of flow for each water-bearing zone/aquifer.

The shallow soils in proximity to the proposed CWHF are comprised of the Happle very channery sandy loam. The Happle very channery sandy loam is a very well drained soil that is typically up to 60-inches thick. These alluvial deposits consist generally of unconsolidated sand, gravel, cobbles and boulders. Since there are no permitted water well in the vicinity of the proposed facility very little data are available regarding groundwater conditions. No additional information was obtained through a review of the CGS's Ground Water Atlas of Colorado. The Ground Water Atlas does, however, provide additional information that would indicate that if groundwater were available, the pressure head for the upper aquifer might be very near the surface. This data would indicate that flows typically travel from the aquifer to the creek alluvium and follow the path of the creek. The Ground Water Atlas also indicates aquifer conductivity for the Upper Piceance Basin is 0.8 to 1.2 ft/d and the Lower Piceance Basin is 0.1 to 1.1 ft/d. There are several thousand feet of the Wasatch and Fort Union Formations exposed at the surface in this area, and, due to their low permeability, these formations are considered to be the basal confining unit for Piceance Basin aquifers.

Form 28 Supplement, Rule 908.b.(7).B.v.

Please provide a drawing that illustrates the location of the proposed CWHF in relation to the floodplain for Conn Creek.

The requested floodplain map has been provided as Figure 8 accompanying this document. According to data available from Garfield County's database and FEMA data, Oxy's proposed CWHF is not within a documented floodplain. The area surrounding this facility is an area where FEMA has not performed a flood hazard analysis and no floodplain or floodway has been

identified. Based on the elevation difference between the proposed site and Conn Creek, it is highly unlikely that a flood in this creek would impact the facility.

Form 28 Supplement, Rule 908.b.(7).B.vi.

Please provide analytical results for the baseline water quality conditions for shallow groundwater in the vicinity of the proposed CWFNCC.

Because of the lack of shallow groundwater and because there are no permitted water well sites in proximity to the proposed facility there is currently no means available to assess baseline water quality conditions for groundwater. Based on this limitation, Oxy will perform analysis on water collected from one upstream Conn Creek location and one downstream from the CWHF. Analysis of these water samples will be provided to the COGCC after they have been performed.

Form 28 Supplement, Rule 908.b.(7).B.vii.

Please use analytical results for samples collected from shallow groundwater and from nearby Conn Creek and provide an evaluation the potential for the proposed CWHF facility to impact shallow groundwater and nearby surface water.

Based on the analysis of the waste water that would typically be processed at the CWHF, the greatest potential for impact would be associated with elevated saline levels in the receiving water body. Oxy will minimize the possibility of any impacts to groundwater or surface water through the implementation of the Operating Plan, the SWMP, the SPCC plan and the Emergency Response plan.

Form 28 Supplement, Rule 908.b.(7).C.i.

Please provide complete design details and drawings for liners used for existing and proposed ponds and secondary containment features (for ASTs) that will be used for the proposed CWHF facility.

See drawings in Attachment R for the details of the secondary containment features. Additional details specific to Secondary containment for the facility are included in Oxy's SPCC (see Attachment E). Oxy does not intend to construct any holding ponds for the CWHF. Any references to water storage ponds have been removed from the updated COGCC submittal.

Form 28 Supplement, Rule 908.b.(7).C.ii.

Please provide the design details and drawings for the depth of cut for pond/secondary containment feature liners, material underlying the liner, and method for fastening/anchoring liners to the pit perimeter.

Oxy does not intend to construct any holding ponds for the CWHF. Any references to water storage ponds have been removed from the updated COGCC submittal.

Form 28 Supplement, Rule 908.b.(7).C.iii.

Please provide location, dimensions and grade for all existing and proposed surface water diversion structures.

The location, dimensions and grade information associated with surface water diversions are contained in the attached Grading and Drainage Plan diagrams in Attachment R, sheets 2, 3, 4 and 5 of 6.

Form 28 Supplement, Rule 9011.b.(7).C.iv.

Please provide location and dimensions for all existing and proposed surface water containment structures.

The details associated with surface water containment are contained in the attached Grading and Drainage Plan diagrams in Attachment R, sheets 2, 3, 4 and 5 of 6.

Form 28 Supplement, Rule 908.b.(7).C.v.

Once a treatment alternative has been selected please provide drawings illustrating the location of all existing - and proposed CWHF structures and access roads, including proposed ASTs, secondary containment, treatment units, storage ponds, truck loading/unloading facilities, pipelines, distilled water amendment processes, and Conn Creek outfall. Please use alternative color, font et al, on the drawings to distinguish between existing and proposed CWHF features.

Oxy no longer intends to implement the compartmentalized (distillation) water treatment units at the CWHF. The Form 28 submittal document has been updated to remove any references to utilizing the compartmentalized water treatment units. Updated drawings of the CWHF facility which differentiate between existing and proposed equipment are provided as an attachment to this submittal.

Form 28 Supplement, Rule 908.b.(8)

Please update the Operating Plan (OP) for the proposed CWHF facility to contain OXY's selected alternative for treatment and disposal of produced water. Make the Operating Plan a stand-alone document. Add drawings, system details, flowcharts, permits, Groundwater Monitoring Plan, Surface Water Monitoring Plan, Spill Prevention Control and Countermeasures Plan, Stormwater Management Plan, Dust and Moisture Control Plan, Inspection and Maintenance Checklist, Emergency Response Procedures, Noise and Odor Mitigation Procedures, and Preliminary Site Closure Plan as appendices. Provide a detailed description of the selected treatment and disposal processes. Provide a mass balance flow chart that illustrates total volume (input) to the CWHF facility from the various sources (i.e., pipeline versus trucking), the methods selected for separation of condensate/gases, the volume treated, disposed, or reused. Indicate the volume to be treated and discharged to Conn Creek, the volume to be disposed and the methods and volumes for various re-use alternatives.

Oxy has provided the above requested materials as part of this submittal. Dust, moisture, noise and odor mitigations are included in the Operating Plan (see Attachment B). This submittal has been constructed in such a way as to allow the Operating Plan to be representative of a comprehensive, standalone document simply by removing the materials that precede Attachment B (the Operating Plan). As previously noted, any data requirements associated with the water distillation treatment process have been removed from this application. As a result, Oxy does not propose to discharge any fluids to Conn Creek.

Form 28 Supplement, Rule 908.b.(8).A.

Please provide details regarding the method select to treat produced water at the CWHF facility within the Operating Plan.

Oxy no longer intends to implement the compartmentalized (distillation) water treatment units at the CWHF.

Form 28 Supplement, Rule 908.b.(8).B.

Please include a Dust and Moisture Control Plan for the proposed CWHF facility as an appendix to the Operating Plan.

Oxy will utilize the same dust control methods that are used elsewhere in their operations. The primary method that will be used will be to apply water to the roads accessing this facility as needed to control dust.

Form 28 Supplement, Rule 908.b.(8).C.

Please provide a copy of the Surface Water Monitoring Plan to be used to comply with the CDPHE surface water discharge permit as an appendix to the Operating Plan. Please include a copy of the approved CDPHE Permit for Industrial Discharge to Conn Creek in the same appendix. Provide details for sampling methods/analyses to be used to profile waste water intended for off-site disposal as an appendix to the Operating Plan. Provide methods used for profiling brine and/or other by products of the selected treatment process.

Oxy no longer intends to implement the compartmentalized (distillation) water treatment units at the CWHF. As a result, Oxy does not propose to discharge any fluids to Conn Creek.

Form 28 Supplement, Rule 908.b.(8).D.

Please prepare and provide an Inspection Checklist for the daily, weekly and monthly monitoring activities to be conducted at the CWHF facility. Please provide method for storing/cataloging/tracking checklists at the CWHF and the proposed method to prompt maintenance activities. Please provide a schedule and details for the type and frequency of maintenance activities required at the CWHF for the equipment, pipeline and ASTs et al. Include this information as an appendix to the Operating Plan.

Inspection and maintenance checklists are included in Attachment B of this submittal as part of the Operating Plan. All records on the site, including the daily logs, are first created filled in manually, signed by the responsible operator, and filed at the Oxy Cascade Creek Field Office. Documents may also be scanned and stored in the appropriate electronic file for access by all management personnel. The original record is stored in a 3-ring binder and kept at the Field Office site for a minimum of 6months. The original records are then sent to the regional engineering office for storage.

Form 28 Supplement, Rule 908.b.(8).E.

Please provide a plan for emergency response in the Contingency Plan [Rule 908.b.(11)] as an appendix to the Operating Plan.

A copy of Oxy's Emergency Response Plan has been provided as Attachment C to this document.

Form 28 Supplement, Rule 908.b.(8).F.

Please describe in the Operations Plan how the CWHF personnel will maintain records for the facility, including inspection sheets, maintenance activity, sampling results, discharge and treatment volumes, et al. Discuss method for storing/cataloging/tracking this information for the CWHF. Include this discussion as an appendix to the Operating Plan.

Details addressing the maintaining of records are addressed above in response to comments specific to Rule 901b.(8).D. Additionally, the same details are included in Oxy's Operations Plan (see Attachment B).

Form 28 Supplement, Rule 908.b.(8).G

Please describe measures and provide drawings of facilities to be used for Site security at the proposed CWHF facility by personnel, for vehicular traffic and to control/limit access by wildlife. Include this information as an appendix to the Operating Plan.

See detailed drawings labeled Topographic Map, B Topo in Attachment R for the details specific to the guard station and gate. Oxy's security personnel are on duty 24 hours a day at the guard station and will challenge anyone that attempts to circumvent the gates and fencing which control access to the facility. Oxy's gates and fences are constructed according to industry standards for access control in order to prevent individuals from gaining access by driving around the checkpoint. Oxy personnel are trained to challenge any individual and contact security if that individual is not recognized as an Oxy employee or contactor.

Rule 908.b.(B).H.

Please provide hours of operation, contact telephone information for all key personnel in the Contingency Plan [Rule 906.b.(11)] as an appendix to the Operating Plan.

The details requested are included in Oxy's Emergency Response Plan included as Attachment C of the application submittal.

Form 28 Supplement, Rule 908.b.(8).I

Please indicate what measures will be taken to mitigate noise and odor from the facility, or explain why no measures are necessary.

Since there are no large motors, generators, etc scheduled to be installed as part of the CWHF, none of the equipment at the CWHF facility is anticipated to generate significant noise. All noise generated at the CWHF will be at or below the db thresholds stipulated by Garfield County Land Use Code included as part of the Limited Impact Review application process and the COGCC regulatory requirements for noise. If noise complaints arise during Oxy's operation of the CWHF, noise studies will be conducted to assess the db(A) output and compared to the appropriate county and state regulation. If the noise output is deemed to exceed the thresholds stipulated by Garfield County or the COGCC, Oxy will implement the appropriate noise reduction methodologies to bring the CWHF into compliance.

Form 28 Supplement, Rule 908.b.(8).J

Please describe the type and volume of wastes that will be a by-product for the CWHF facility and provide a plan for the final disposition of these wastes (e.g., brine) generated from the treatment of produced water. Provide analytical-methodologies and/or profiling techniques to be used to demonstrate that the wastes are acceptable for a landfill or other.

Oxy no longer intends to implement the compartmentalized (distillation) water treatment units at the CWHF. As a result, Oxy does not propose dispose of any distillation related brine or other waste products at local landfills.

Form 28 Supplement, Rule 908.b.(9).A.

Please provide a scaled figure (1:24,000) that denotes a 1-mile radius around the site. Please present the location(s) of the proposed CWHF facility and any water wells within that area as identified by the State Engineer. Please sample any wells within a 1-mile radius for the analytes listed under Rule 908.b.(9).A. Please provide the water quality data from these analyses to the Director in an electronic data deliverable format within three months of collection of the samples. If access to a well is denied, please provide documentation name, address, e-mail address and telephone numbers of the owner/lessee of the well, to show a good-faith effort was made to gain access to the well.

As noted previously, there are no wells within 1 mile of the facility; therefore no water quality data from water wells is currently available.

Form 28 Supplement, Rule 908.b.(9).B.i.,ii..

Please present OXY's choice of monitoring system either: construction of dual liners with a leak detection system beneath all ponds and ASTs; or drilling/construction of groundwater monitoring wells.

- If dual liners/leak detection is selected please provide the plans/details for the construction and monitoring of the system as an appendix to the Operating Plan.
- If groundwater monitoring is selected please provide lithologic and well construction logs for the monitoring wells and a groundwater monitoring plan as an appendix to the Operating Plan.

At the time of submittal of this application, Oxy has not constructed the monitoring wells proposed for this facility. Upon approval of the proposed location(s) by the COGCC and after construction of the monitoring wells, Oxy will provide lithologic and well construction logs for the monitoring wells. Oxy's groundwater monitoring plan is provided as Attachment H to this submittal.

Form 28 Supplement, Rule 908.b.(10).

Please include a copy of the CDPHE surface water discharge permit and copies of analytical results for discharge to Conn Creek used to obtain the permit as an appendix to the Operating Plan. In addition, please copy the Director on results from all compliance surface water monitoring reports forwarded to CDPHE at the same frequency as those submitted to CDPHE.

Not applicable, see details noted above

Form 28 Supplement, Rule 908.b.(11).

Please provide a site-specific Contingency Plan as an appendix to the Operating Plan that addresses the following elements:

- Emergency response and 24-hour contact information for key personnel/authorities, emergency personnel and pertinent agencies
- Provide a flowchart illustrating/outlining responsibilities under a joint operating agreement for maintenance, closure, and monitoring at the facility
- Please include a list of types, volumes and locations of specific chemicals in the Contingency Plan. Please also include emergency response procedures for each chemical to be stored at the CWHF.
- The Contingency Plan should include evacuation routes or meeting locations to ensure all staff have evacuated the facility.

- The Contingency Plan should include specific response activities to address produced water, condensate or light oil which will be stored at the facility, natural gas leaks from the treatment processes, amendment chemicals, or unusable waste water.

A copy of Oxy's Emergency Response Plan (ERP) and Evacuation Route has been provided as in Attachment C of this document. The ERP contains the specific data and details requested above. Oxy does not have or intend to introduce a joint operating agreement for the CWHF. A copy of Oxy's evacuation route for the CWHF is also included in Attachment C.

Form 28 Supplement, Rule 908.d.

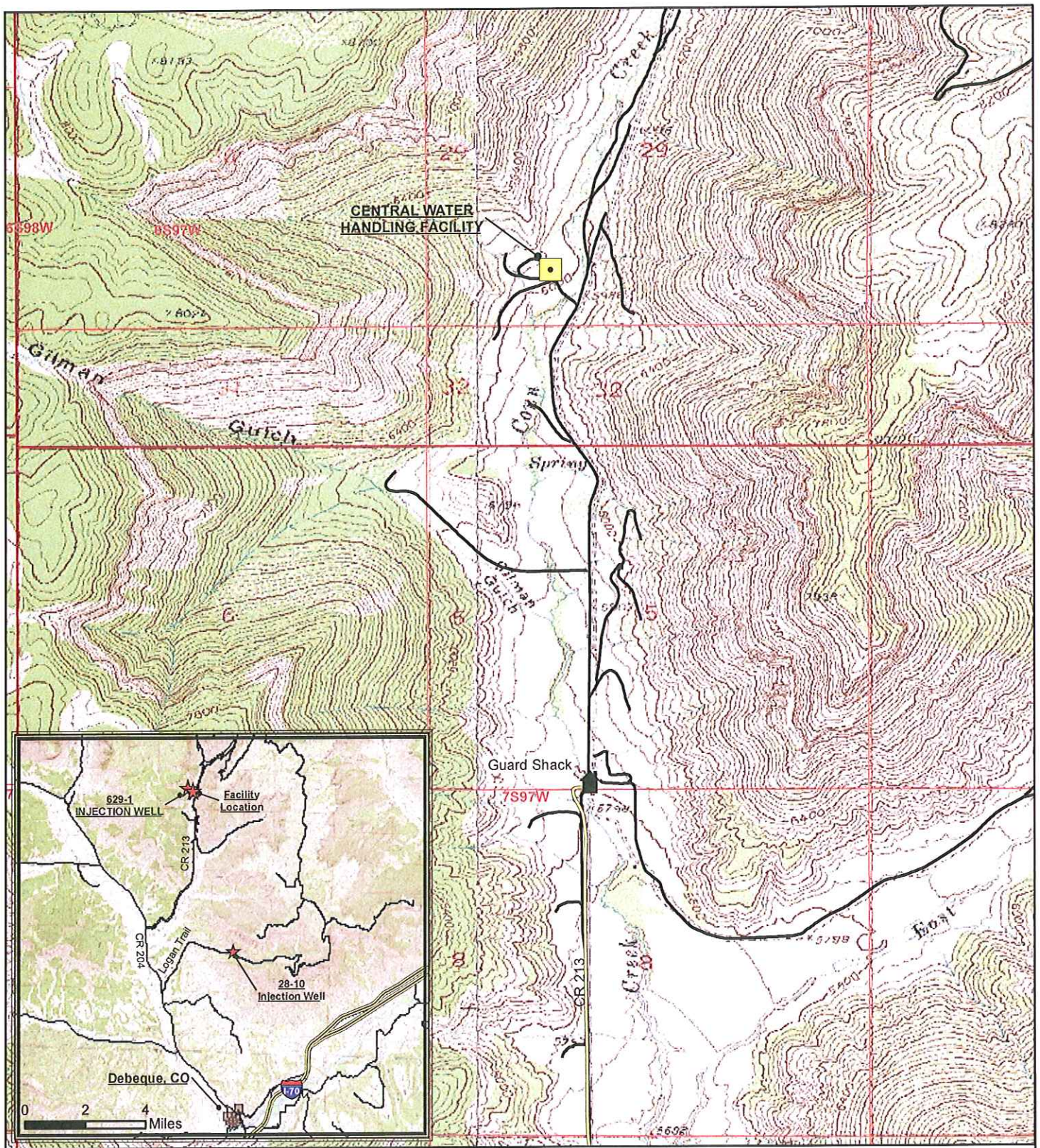
Please provide a detailed site-specific cost estimate for reclamation of the CWHF facility upon closure. Include this information within the Preliminary Closure Plan and attach to the Operating Plan as an appendix. The cost estimate shall include costs associated with worst case scenarios including spills/release(s) from the facilities, managing the impacted soils et al.

The requested cost estimate is provided in Attachment Q of this submittal.

Form 28 Supplement, Rule 908.e.

Prepare and provide a Facility Modification Checklist (FMC) as an appendix to the Operating Plan to be used by OXY personnel as a cue to forward information with the FMC for the facility.

Oxy does not anticipate significant changes to the proposed scope, layout or design of the CWHF. As a result, a facility modification checklist will not be required. Should any modifications to the facility be implemented, Oxy intends to conform to COGCC Rule 908.e. Throughout the life of the facility Oxy shall submit proposed modifications to the facility design, operating plan, permit data, or permit conditions to the Director for prior approval before construction activities commence.



- Facility Location (not to scale)
- Existing Private Roads
- Guard Shack
- Garfield County Roads

0 0.25 0.5 1 Miles

1:24,000



PROJECT NO: 009-0420

DRAWN BY: Leslie Booth
GIS Analyst

DATE: 02/15/2010

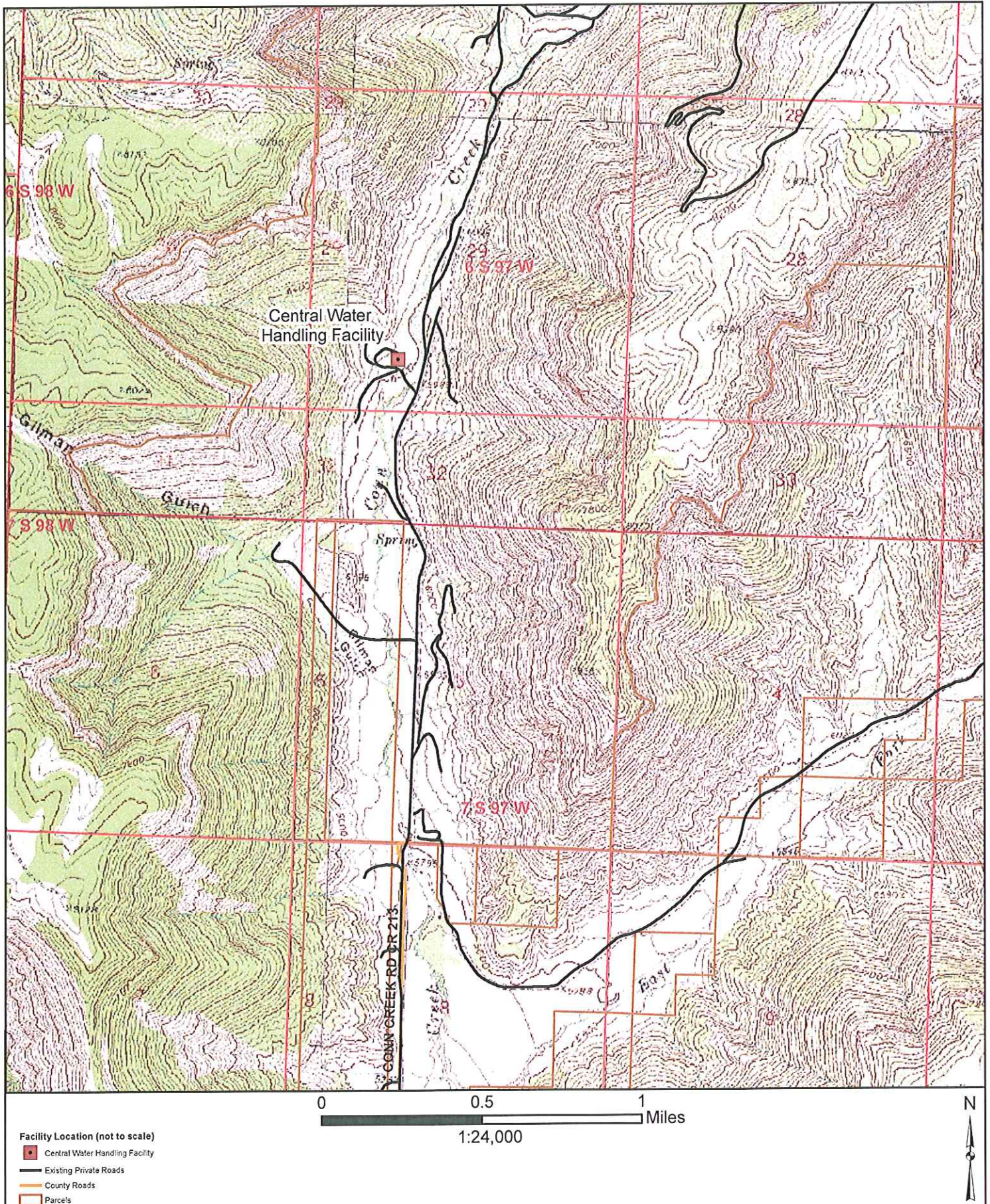
TOPOGRAPHIC MAP
CENTRAL WATER HANDLING FACILITY
OXY USA WTP LP
SECT. 29, T6S, R97W, 6TH P.M.
GARFIELD COUNTY, COLORADO

OLSSON
ASSOCIATES

826 21-1/2 ROAD
GRAND JUNCTION,
CO 81505
TEL 970.263.7800
FAX 970.263.7456

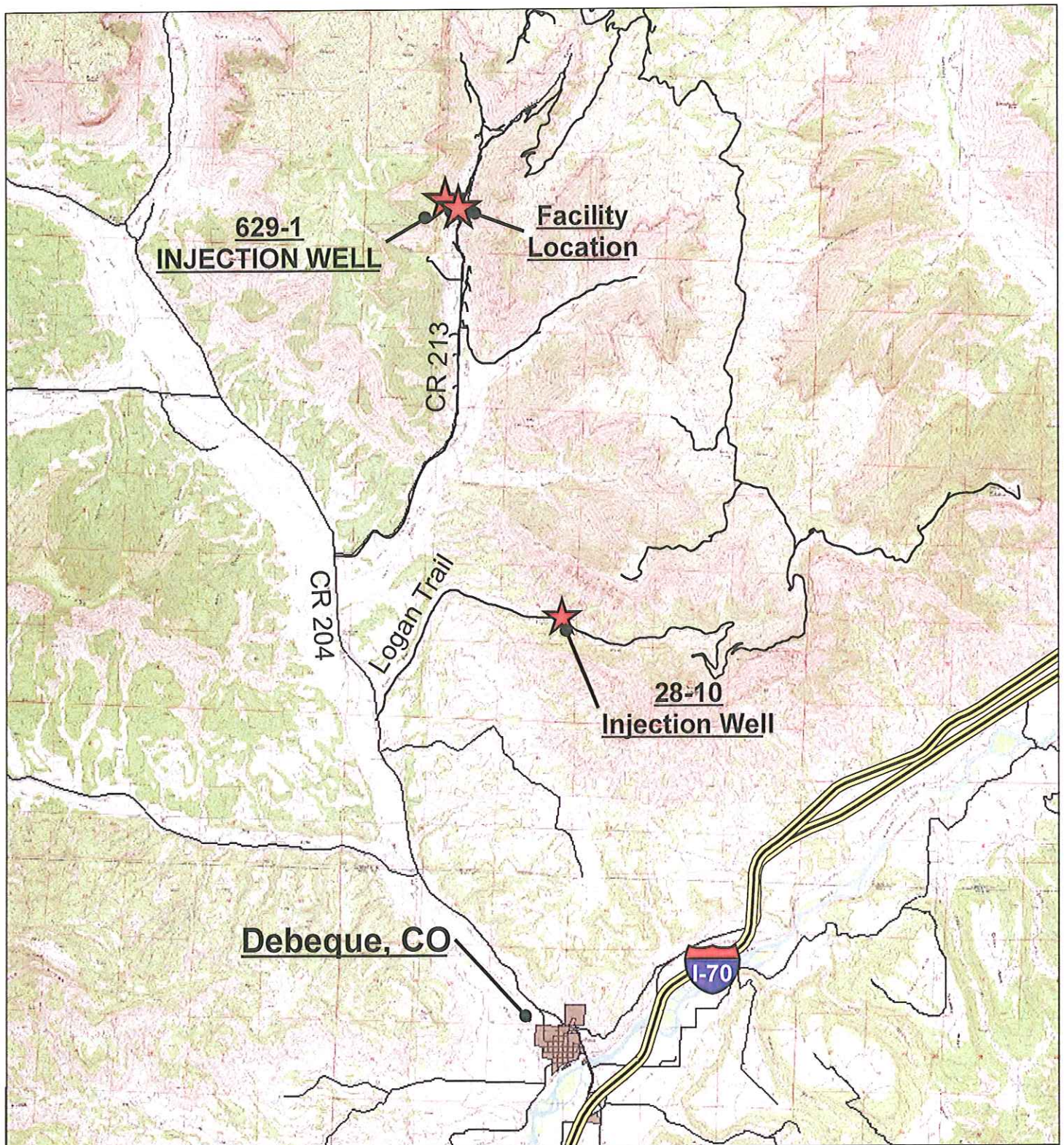
FIGURE

1



PROJECT NO:	009-0420	CENTRAL WATER HANDLING FACILITY TOPOGRAPHIC MAP 2 OXY USA WTP LP GARFIELD COUNTY, COLORADO SWSW, SECTION 29, T6S, R97W, 6TH PM	OLSSON ASSOCIATES	FIGURE
DRAWN BY:	Leslie Booth GIS Analyst			
DATE:	02/15/2010			2


826 21-1/2 ROAD
GRAND JUNCTION
CO 81505
TEL 970.263.7800
FAX 970.263.7456

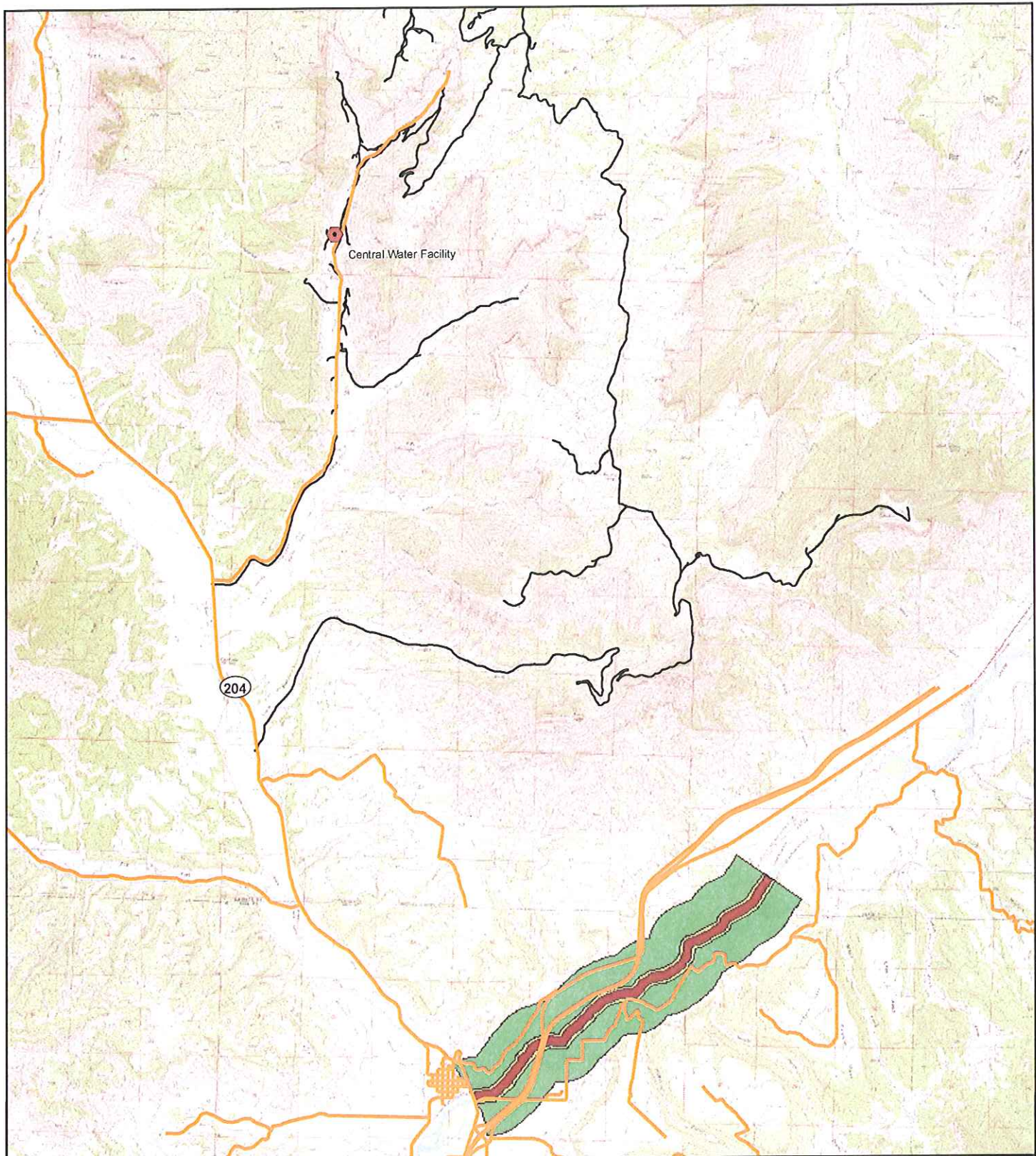


0 2 4 Miles



- Existing Roads
- == Interstate
- DeBeque, CO

PROJECT NO:	009-0420	ROADWAY ACCESS AND INJECTION WELL LOCATIONS CENTRAL WATER HANDLING FACILITY OXY USA WTP LP SECT. 29, T6S, R97W, 6TH P.M.	 OLSSON ASSOCIATES 826 21-1/2 ROAD GRAND JUNCTION, CO 81505 TEL 970.263.7800 FAX 970.263.7456	FIGURE
DRAWN BY:	Leslie Booth GIS Analyst			3
DATE:	02/15/2010			



--Zone data obtained from COGCC website: <http://cogcc.state.co.us>--

0 0.5 1 2 3
Miles
1 inch equals 1.7 miles



- Central Water Facility
- Exclusion Buffer (300 feet)
- Intermediate Buffer (500 feet)
- Existing Private Roads
- External Buffer (1/2 mile)
- County Roads

PROJECT NO: 009-0420

DRAWN BY: Leslie Booth
GIS Analyst

DATE: 02/15/2010

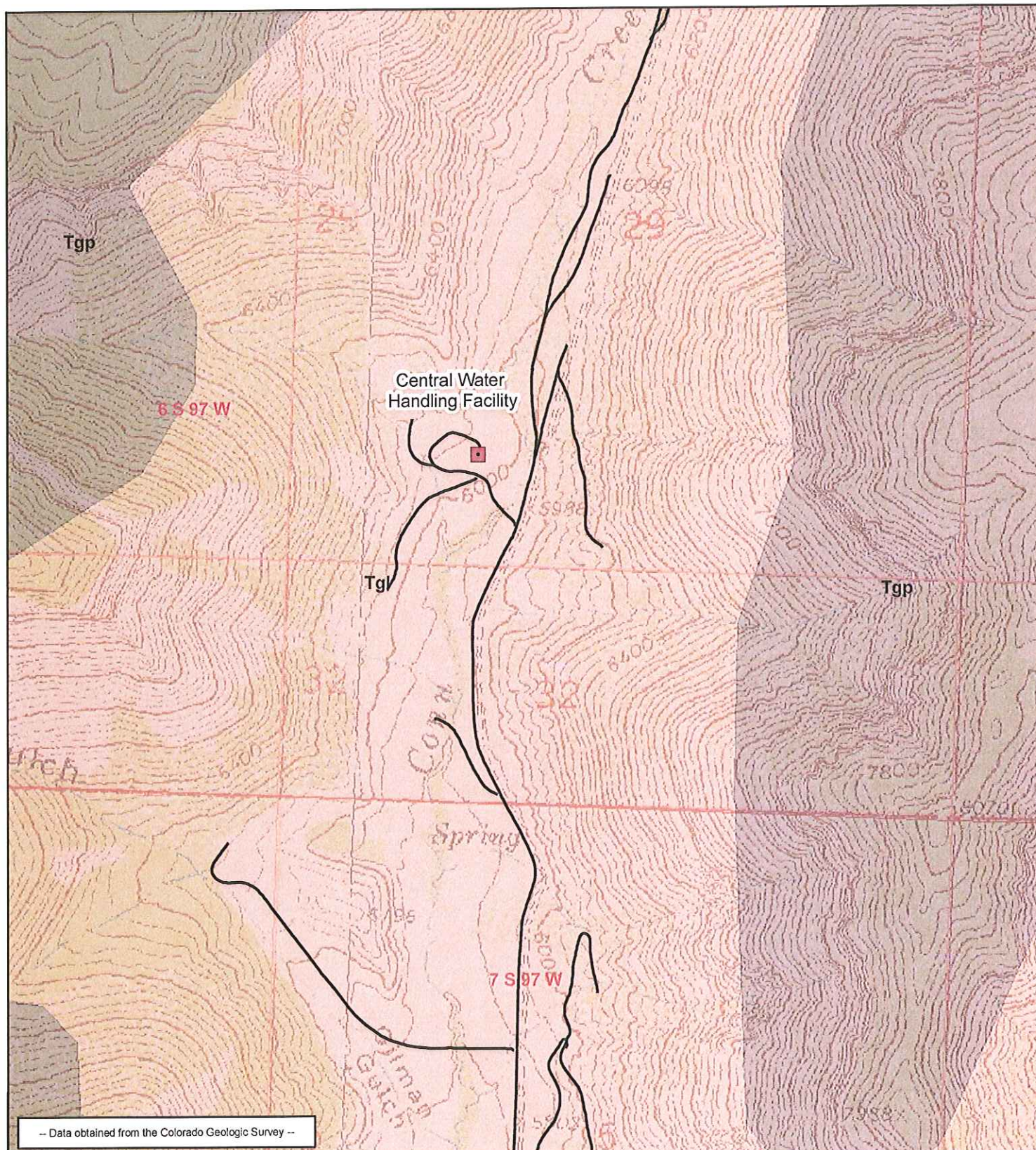
317B NOTIFICATION
WATER HANDLING, TREATMENT
AND STORAGE FACILITY
OXY USA WTP, LP
GARFIELD COUNTY, COLORADO

OLSSON
ASSOCIATES

826 21-1/2 ROAD
GRAND
JUNCTION, CO
81505
TEL 970.263.7800

FIGURE


4



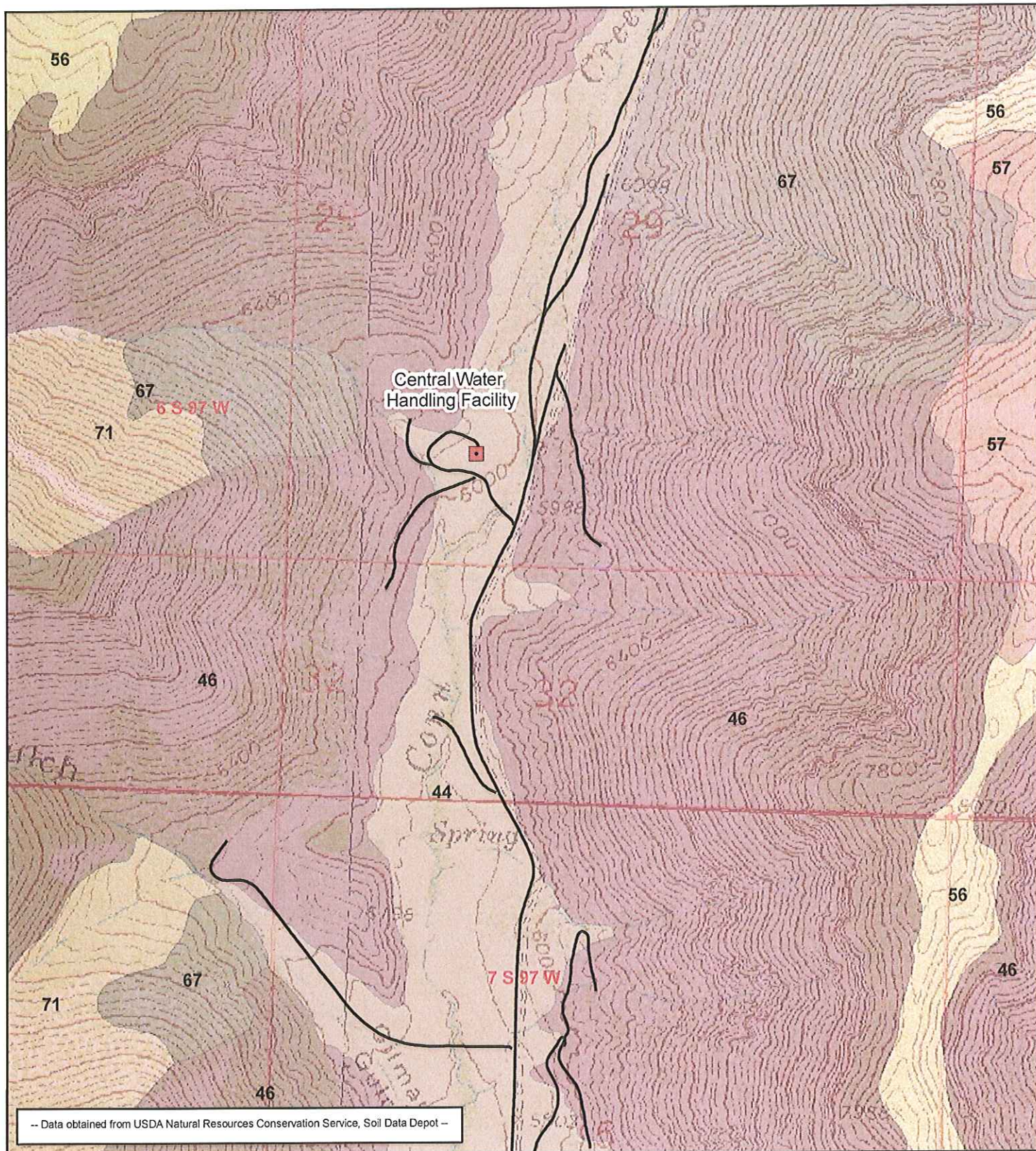
0 500 1,000 2,000
Feet
1 inch equals 1,000 feet

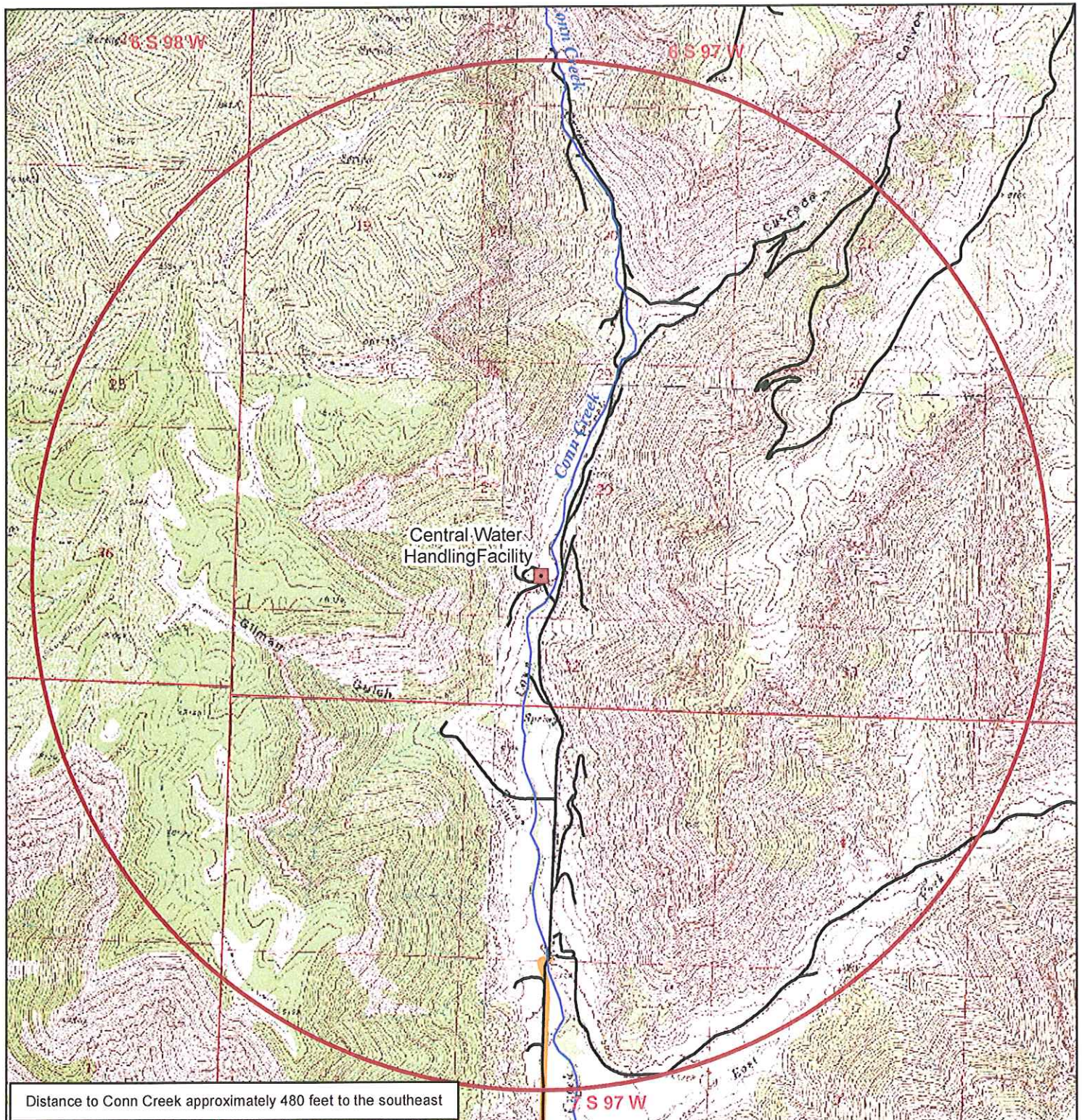
Facility Location (not to scale) Surface Geology

- Central Water Handling Facility
- Tgl - Green River Formation-Lower Part
- Tgp - Green River Formation-Parachute Creek Member
- Existing Private Roads
- County Roads

PROJECT NO:	009-0420	CENTRAL WATER HANDLING FACILITY SURFACE GEOLOGY MAP OXY USA WTP LP GARFIELD COUNTY, COLORADO SWSW, SECTION 29, T6S, R97W, 6TH PM		FIGURE
DRAWN BY:	Leslie Booth GIS Analyst			5
DATE:	02/15/2010			

826 21-1/2 ROAD
GRAND JUNCTION
CO 81505
TEL 970.263.7800
FAX 970.263.7456





Distance to Conn Creek approximately 480 feet to the southeast


0 0.5 1 Mile
1 inch equals 2,750 feet

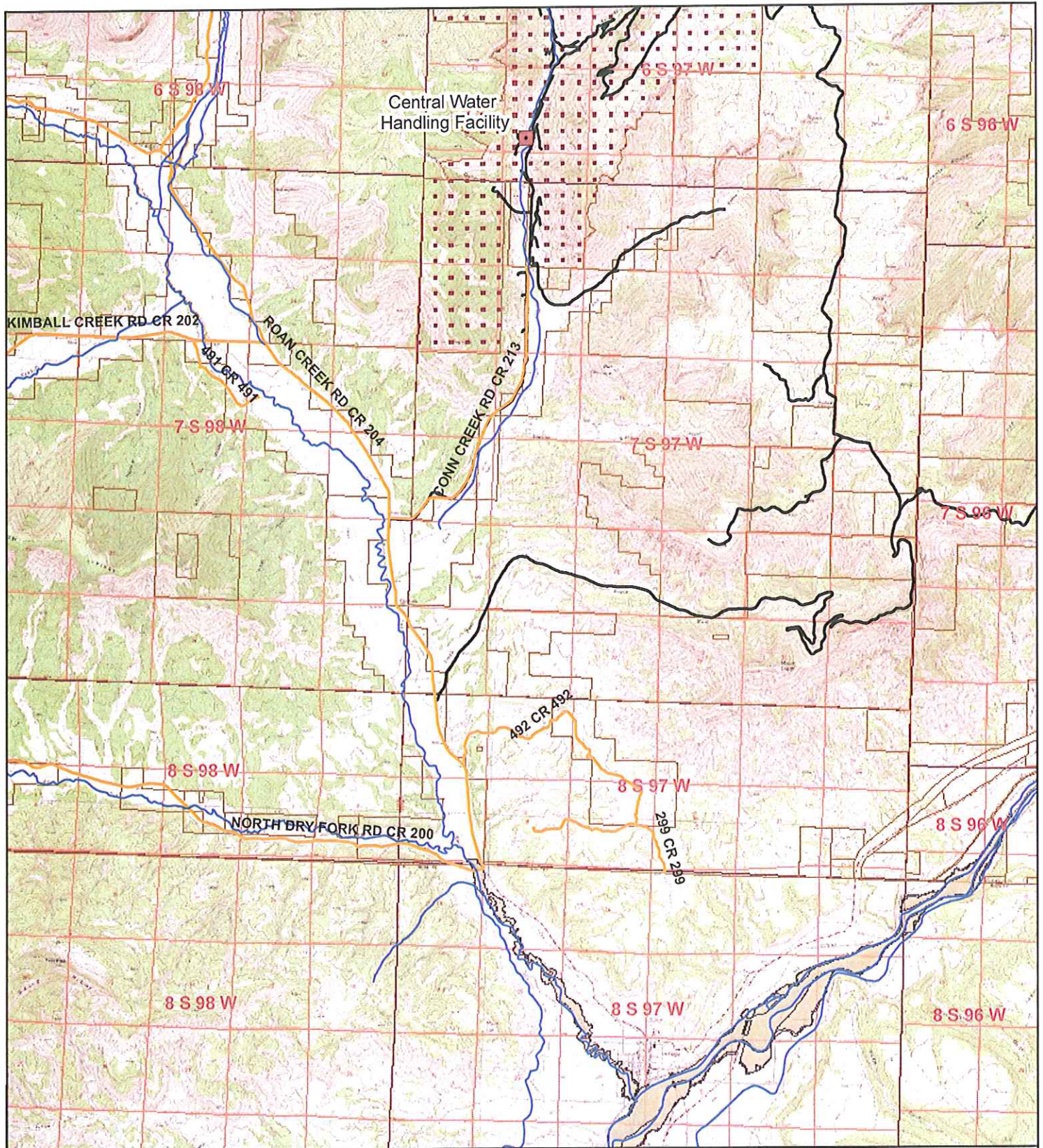
Site Location (not to scale)

- Central Water Handling Facility
- Streams
- Existing Private Roads
- County Roads

2-mile radius indicated by dark red circle.
Surface waters shown lie within 2 miles of subject area.



PROJECT NO:	009-0420	CENTRAL WATER HANDLING FACILITY SURFACE WATERS OXY USA WTP LP GARFIELD COUNTY, COLORADO SWSW, SECTION 29, T6S, R97W, 6TH PM		826 21-1/2 ROAD GRAND JUNCTION CO 81505 TEL 970.263.7800 FAX 970.263.7456	FIGURE
DRAWN BY:	Leslie Booth GIS Analyst				7
DATE:	01/04/2010				



Site Location (not to scale)


Central Water Handling Facility
 216921400026 (Area: 10,303 acres)

Streams
 Existing Private Roads
 County Roads
 De Beque Canyon Floodway

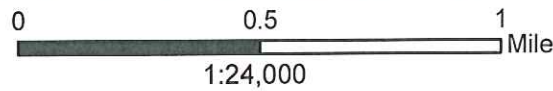
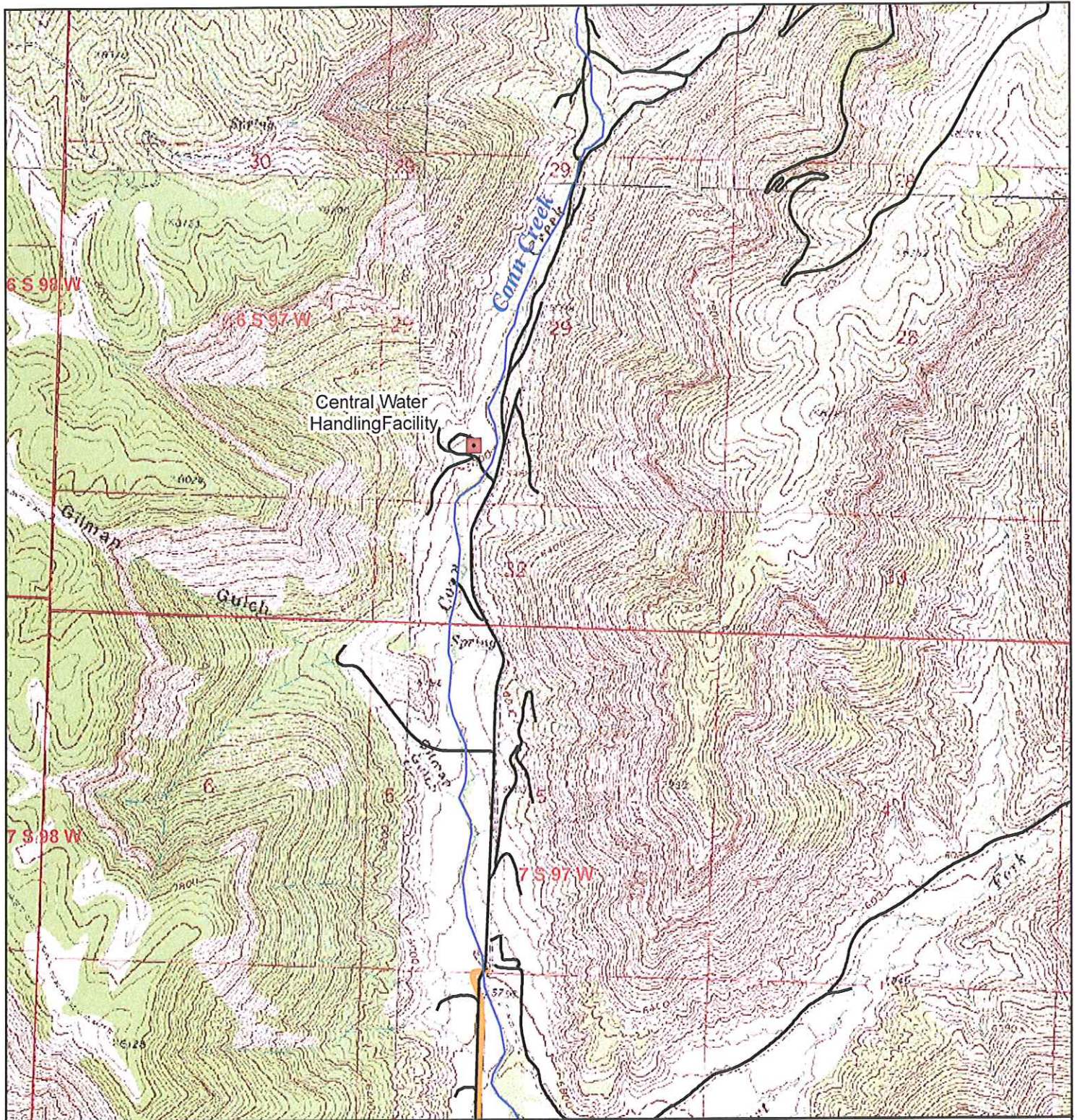
0 0.5 1 2 3 4 Miles

1 inch equals 1.5 miles



PROJECT NO:	009-0420	CENTRAL WATER HANDLING FACILITY FLOODPLAIN MAP OXY USA WTP LP GARFIELD COUNTY, COLORADO SWSW, SECTION 29, T6S, R97W, 6TH PM		FIGURE
DRAWN BY:	Leslie Booth GIS Analyst			8
DATE:	02/15/2010			

826 21-1/2 ROAD
 GRAND JUNCTION
 CO 81505
 TEL 970.263.7800
 FAX 970.263.7456




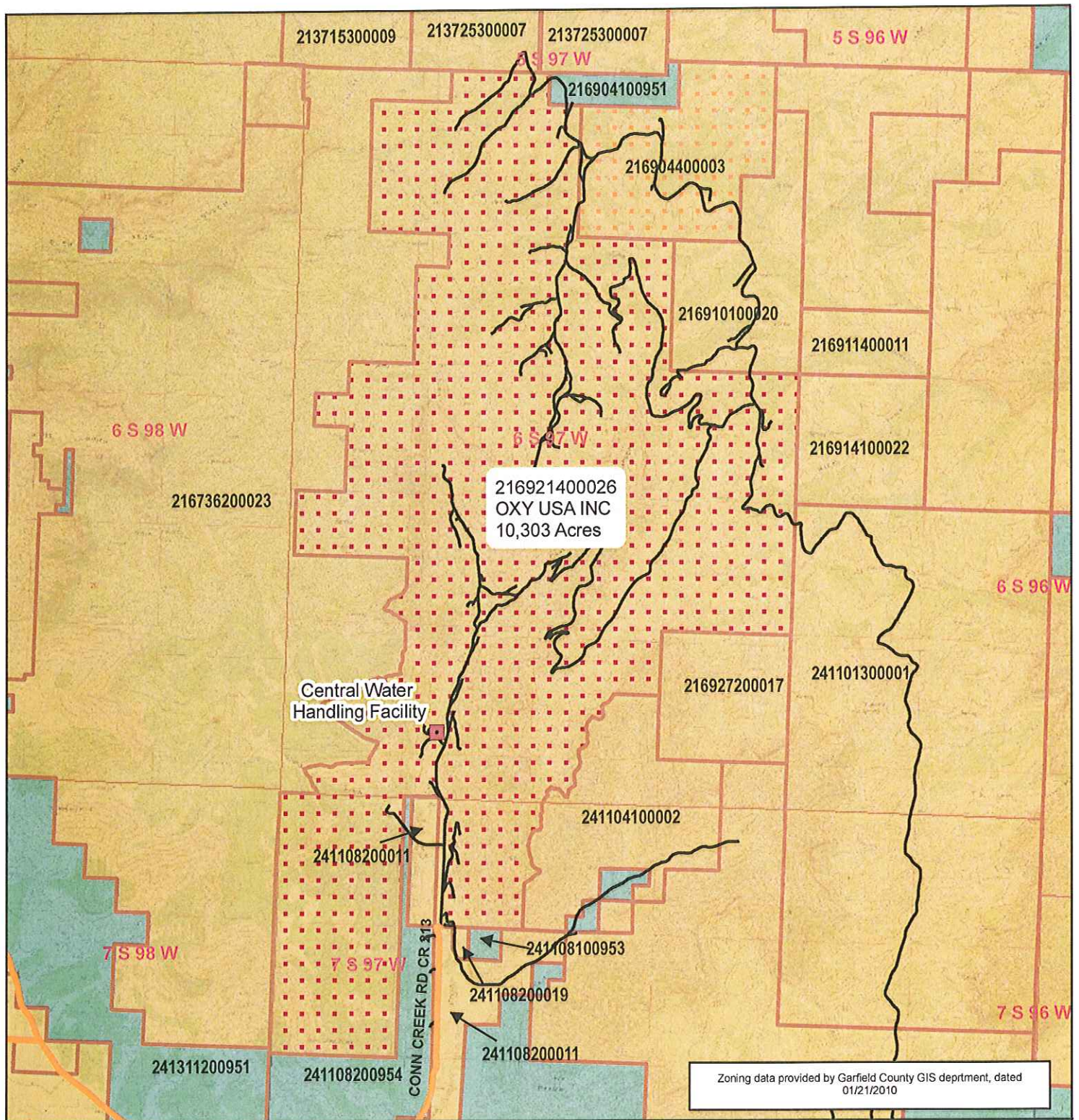
Site Location (not to scale)

- Central Water Handling Facility
- Streams
- Existing Private Roads
- County Roads

This map represents a 1:24,000 scale, showing that there are no domestic water wells within 1 mile of the proposed site.



PROJECT NO:	009-0420	CENTRAL WATER HANDLING FACILITY DOMESTIC WATER WELL LOCATIONS OXY USA WTP LP GARFIELD COUNTY, COLORADO SWSW, SECTION 29, T6S, R97W, 6TH PM		826 21-1/2 ROAD GRAND JUNCTION CO 81505 TEL 970.263.7800 FAX 970.263.7456	FIGURE
DRAWN BY:	Leslie Booth GIS Analyst				9
DATE:	02/15/2010				



Adjacent land use for subject parcel is Public Lands and Resource Lands used for Natural Gas Development

0 0.5 1 2 Miles
1 inch equals 5,400 feet

Facility Location (not to scale)

- Central Water Handling Facility
- Existing Private Roads
- County Roads

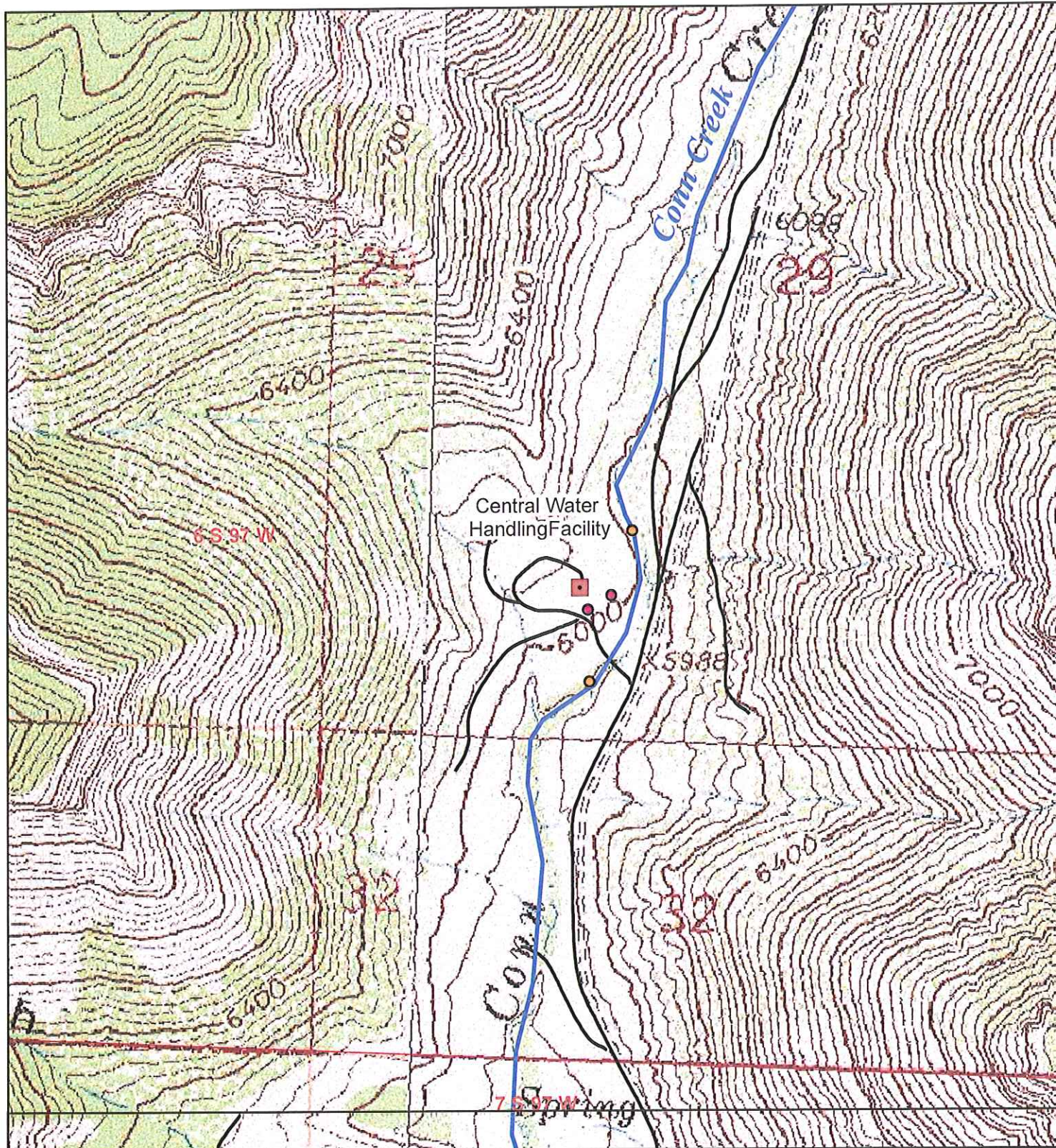
Parcels

- 216921400026 (Area: 10,303 acres)
- 216904400003 (Area: 1,053 acres)

Zoning

- PL - Public Lands
- RL - Resource Lands

PROJECT NO:	009-0420	ZONING MAP CENTRAL WATER HANDLING FACILITY OXY USA WTP LP GARFIELD COUNTY, COLORADO SWSW, SECTION 29, T6S, R97W, 6TH PM	OLSSON ASSOCIATES 826 21-1/2 ROAD GRAND JUNCTION CO 81505 TEL 970.263.7800 FAX 970.263.7456	FIGURE
DRAWN BY:	Leslie Booth GIS Analyst			10
DATE:	02/15/2010			



0 250 500 1,000 1,500 2,000 Feet

1 inch equals 750 feet



Site Location (not to scale)

■ Central Water Handling Facility

Sampling Points

● Monitoring Well Location

● Surface Water Sampling on Conn Creek

— Streams

— Existing Private Roads

— County Roads

PROJECT NO: 009-0420

DRAWN BY: Leslie Booth
GIS Analyst

DATE: 02/15/2010

WATER SAMPLING AND MONITORING
LOCATIONS
CENTRAL WATER HANDLING FACILITY
OXY USA WTP LP
GARFIELD COUNTY, COLORADO

OLSSON
ASSOCIATES

826 21-1/2 ROAD
GRAND JUNCTION
CO 81505
TEL 970.263.7800
FAX 970.263.7456

FIGURE

11

OXY USA WTP LP

CENTRAL WATER HANDLING FACILITY

PROCESS DESCRIPTION

DETAIL ASSOCIATED WITH FACILITY DESIGN AND ENGINEERING

OXY USA WTP LP's (Oxy) Centralized Water Handling Facility (CWHF) is intended to accommodate Oxy's requirement for disposal, storage, and reuse of produced water resulting from natural gas development activities in its Piceance Basin operations area. The proposed facility will facilitate the collection, storage, disposal and transfer of produced water from Oxy's natural gas wells. The primary use of the water will be for reuse in Oxy's natural gas drilling and completion operations. Any water that cannot be reused as part of Oxy's operations will be injected into salt water disposal wells that have been properly permitted with the Colorado Oil & Gas Conservation Commission (COGCC), or taken to other appropriate disposal facilities.

The proposed CWHF will consist of a system of closed-tank gravity separation tanks. The typical closed-tank gravity separation system will be comprised of settling tanks, final water handling tanks and includes access to Oxy's salt water disposal wells. Additional ancillary infrastructure will consist of a pump building to house the proposed water pumps, electrical buildings for power phase controls, structures to contain other electrical components and other small structures required to house pump controls including a piping valve control set. Oxy will utilize the closed-tank gravity separation system to recycle water for reuse during their operations in the area. Condensate separated at the facility will be stored in tanks located at the facility. Condensate haul trucks will periodically come and remove the condensate for sales. The facility will also be served by salt water disposal injection wells which will be monitored remotely by Oxy's CC I control room. Further details and facility diagrams are provided in Attachment Q of this application.

The proposed operation of this facility is intended to reuse and/or dispose of water gathered from Oxy's natural gas well sites in the area. Produced water will be transported primarily via existing water pipelines. In the areas of Oxy's operations not currently serviced by pipelines for produced water, trucks will be utilized for transport of water to the water handling facility. Prior to transport of water to the water handling facility, residual oil or condensate will be allowed to separate by gravity from the produced water and then removed via a series of gravity separator tanks on the well pads. After the first stage of residual oil/condensate removal at the well pads, the water will be piped to the water handling facility.

After the water is piped to the water handling facility, it will be stored in a number of tanks which will be configured to allow for additional gravity separation and removal of residual oil/condensate. The produced water will be stored in four existing water storage tanks while condensate will be stored in three condensate storage tanks. The water will also have impurities removed as it is passed through a series of filters and an additional 2-phase separator. The proposed tank batteries provide settling time to allow the remaining oil/condensate to break out and rise to the top of the tanks where the material is then directed into designated oil/condensate storage tanks. The oil/condensate stored in these tanks will then be sold just as it is from typical production sites. The high emission tank system will be a closed vapor control system utilizing one or more enclosed-flame combustors, similar to those used on producing

wells, to collect and destroy hydrocarbon emissions. The vapor recovery systems and or closed vapor control systems will be installed both for the water tank area and the condensate separation area. The water tank area system will include a vapor recovery unit and or a closed vapor control system for the water and overflow tanks, and the 2-phase separator; and a tank blanket gas system for the tanks (using fuel gas). The condensate separator area vapor system will include a vapor recovery unit and or closed vapor control system for the condensate, water surge, separator feed tanks and, the 3-phase separator and heater treater. Recovered vapor from the water tank area will be returned to Oxy's gas plant. Vapor recovered from the condensate separation area will be sent to vapor combustion units equipped with fuel gas assist. The combustor destruction efficiency will meet or exceed the appropriate Colorado Department of Public Health and Environment (CDPHE) requirement for air-emission health standards. Oxy will secure all appropriate air quality permits for the operation of these units. From the facility's settling tank batteries, the water will then be pumped to existing storage ponds for future reuse, off-site disposal or to the injection well for onsite disposal.

All tanks will be set within secondary containment. Secondary containment for the atmospheric storage tanks (water storage, condensate storage, etc.) shall be achieved by means of corrugated steel curbing, compacted soil (Hesco) barriers and/or impervious concrete containment structures. Depending upon the location, some tanks will also have an impervious interior liner installed beneath them according to details specified by Oxy's preferred vendor. The entire CWHF facility is constructed to accommodate Oxy's Spill Prevention, Control and Countermeasures Plan (SPCC).

Oxy's proposed use of this water treatment technology will alleviate the heavy demand on local sources of water by recycling water back into operations versus obtaining fresh water from local sources for drilling and completion operations. The local disposal and reuse of water in proximity to where it is generated will also reduce the heavy truck traffic currently traveling down CR 213, Conn Creek Road, CR 204 (Roan Creek Road), and I-70 to disposal facilities.

The CWHF will be accessible to Oxy personnel and contractors 24 hours-a-day, 365-days-a-year. The facility will generally be unmanned; however, daily inspections will be conducted by local operation personnel.

The facility was designed by professional engineers who reviewed all engineering, drafting, procurement support, and field services assistance required for the complete design of all civil, structural, mechanical, piping, electrical, instrumentation and controls for the facility.

The facility has been designed in accordance with applicable Industry Codes and Standards listed and referenced below. In addition, all work shall comply with the latest applicable editions of all applicable codes and standards produced by the following bodies. This list is not necessarily exhaustive and other codes and standards may be used with prior approval. Subdivisions are for convenience only; requirements of all listed codes and standards are to be followed where applicable:

To minimize re-handling and transport of produced water and condensate in the Cascade Creek field an integrated handling system is in operation at the CWHF area. This includes controlling production liquids entering the facility for reduction in pressure, residence time for oil/water separation, and filtration. The facility has the capability to receive and process production fluids from the field, limited storage, and pumps and piping for distribution with connection to various gathering and distribution pipelines within the Cascade Creek operating area.

The CWHF area consists of four (4) 1500bbl settling and storage tanks, a pressure control and off-gas flashing system, inlet liquid filtration, distribution pumps, water injection system for associated disposal well, additional condensate and water storage tanks, instrument and fuel gas pressure regulation, and onsite MCC and power generation. Further details of each unit operation are given below.

Slug Catcher

A linear 36" slug catcher removes liquids from the gas gathering pipeline for slugs of up to 200bbls. The liquid leg operates off of level to send liquid to the Conn Creek I Gas Treating Facility (CC I GTF).

Inlet Liquid Handling

Production liquids from the field gathering system enter through a control valve to regulate and reduce inlet pressure prior to entering the tank system. Pressure is reduced from as high as 1400psi down to 25psi. The liquid goes through a 4 series (option for parallel) 4-bag filter pod system to remove suspended solids down to as low as 5 micron. Liquid then goes over to the 2-Phase separator.

Two Phase Separator

The two-phase separator removes entrained gas from water collected in the field water gathering system to flash any residual entrained gas in the liquid prior to entry into the liquid settling tank (TK401 or TK400). The vapor is connected to Vapor Control System #1 for emission control. The separator operates with instrument gas from a local level float switch.

Separator Feed Tank (TK401, TK400)

Liquid flows through a flow meter totalizing fluid flow through the system. Typical flow at 50MMCFD gas production is 2000 bpd with a maximum throughput of 6000 bpd. With associated residence time water and oil separate in the primary tank. Water continues movement through a water leg into three additional tanks connected in series. Oil remains in the settling tank and is weir'd at the top of the tank (20') for distribution to the CC I GTF condensate handling system. A control valve on the water leg side of the tank facilitates holding liquid level in the settling tank to weir condensate. The tank sizes are nominal 1500bbl (TK401) and 500bbl (TK400). TK400 is connected to Vapor Control System #1 for combustion of residual vapors.

Water Storage Tanks (TK401-404)

Consist of 4 ea 1500bbl tanks. Tanks provide storage of water for either disposal or distribution (pipe, truck) to other areas of the field or offsite. The water storage tanks (TK401-404) have modified tie-ins to other water facility main components and liquid pipelines for load in and out of storage. The tanks vent to atmosphere and handle processed produced water and fresh water.

Overflow Tanks (TK503/504)

Two 400 bbl tanks provide water overflow (TK504) and condensate overflow (TK503). This also facilitates use of the facility without connection to the CC I GTF. These tanks are connected to Vapor Control System #2 to combust residual vapors. The tanks will be emptied by vacuum trucks when required.

Condensate Storage Tanks (TK503/504)

Two 300bbl tanks provide storage of separated and ready for sale condensate for pickup by DOT approved vacuum trucks. These tanks are connected to Vapor Control System #2 to

combust residual vapors. These tanks are in process of conversion to a produced water load in point. At set tank levels a small pump will transfer liquid over to TK400/401 for settling via the inlet liquid handling. All tanks will be set up with a blanket gas system to further control emissions.

CC 629-1 SWD

Two 60HP PD Pumps provide process power to inject produced water into the CC 629-1 Disposal Well. TK401-404 provide the source water for disposal. Water goes through a 2 series 4-bag filter pot line prior to injection. Water is filtered down to 10 micron prior to injection. Power to the package is provided through the MCC and associated gen sets.

Vapor Control System #1

Vapor control system #1 connects vapors from the 2-Phase separator and TK400 for combustion through a 60" combustor. Vapor collection will be via a 4" collection line.

Vapor Control System #2

Vapor control system #2 connects vapors from TK501/502/503/504 through a liquid knock-out drum to a 48" combustor. The gas blanket will tie into a local fuel gas line and use self contained regulators at each tank to provide an appropriate pressure gas to the tank blanket. Vapor collection will be via a 4" collection line.

GENERAL OPERATION

Above systems will be operated within design parameters and maintained to optimize operation as water production rates change. Additional general and operational safeguards to the system include:

- Piping and tank systems protection includes automated heat trace and insulation on lines.
- Lines, pumps not in use for extended periods or planned for long periods of static conditions will be purged to prevent freezing
- General checks for serviceability and leak development
- Maintenance Program – MAXIMO
 - Instrument testing, repair
 - Pressure retaining equipment – Mechanical Integrity program
 - Rotating Equipment – services, and preventative maintenance
- Filtration systems – filters replaced on high differential otherwise at prescribed intervals for filtration level
- Fire protection and prevention equipment checked on a monthly basis.

SYSTEM INTEGRATED PROTECTION (AUTOMATED/MECHANICAL)

Tanks

All – Secondary Containment

TK501/502/503/504 – 18' Crossover connection (Spill mitigation)

TK401/402/403/404 – High Level Alarm (Callout), High High Level Shutdown

TK501/502/503/504 – High Level Alarm (Callout), High High Level Shutdown

Inlet Flow

Pressure Control (PCV400, SDV400) – High Pressure Shutdown

Pumps

PTs (P401/402) – Discharge High Pressure Shutdown, Suction Low Pressure Shutdown

Injection Package (629-1 SWD) - Discharge High Pressure Shutdown, Suction Low Pressure Shutdown

Vapor Control

VCUs – Operation time, Fail to Ignite Alarm (Callout)

OPERATIONAL CHECKS – SYSTEM PROTECTION (OPERATORS)

Tank Level (TK401/402/403/404, TK501/502/503/504) – Daily

Pump Pressure (PT401A/B, PT402A/B) – Daily (When in use)

Inlet Pressure: PIC400 Setpoint, PT403 Pressure – Daily

Inlet Filtration: Filter differential pressure – Daily

Civil and Architectural

Local City, County and State Jurisdictions and Building Commissions as applicable.

American Concrete Institute

- ACI 318-02 Building Code Requirements for Reinforced Concrete Design

American Institute of Steel Construction

AISC Manual of Steel Construction, Ninth edition, ASD

American National Standards Institute

- ANSI A-12.1 Safety Requirements for Floor and Wall Openings, Railings and Toe boards
- ANSI A-14.3 Safety Requirements for Fixed Ladders
- ANSI A-64.1 Requirements for Fixed industrial Stairs

American Society of Civil Engineers

- ASCE 7-02 Minimum Design Loads For Buildings and Other Structures

American Society for Testing and Materials

American Welding Society

- AWS D1.1 Structural Welding Code-Steel

American Society of Heating, Refrigerating and Air Conditioning Engineers

International Code Council (ICC/International Building Code)

- IBC International Building Code, 2003

Metal Building Manufacturers Association

National Fire Protection Association

- NFPA-90 A/B Air Conditioning and Ventilation Systems
- NFPA-30 Flammable and Combustible Liquids Code

Occupational Safety and Health Association

Mechanical

American Petroleum Institute

- API-5L Specification for Line Pipe
- API-6D Specification for Pipeline Valves (Gate, Plug, Ball, and Check Valves)
- API-12F Shop Welded Tanks for Storage of Production Liquids
- API-650 Design and Construction of Large, Welded, Low-Pressure Storage Tanks
- API-570 Piping Inspection Code: Inspection, Repair, Alteration and Rerating of In-Service Piping Systems
- API-598 Specification for Valves Inspection and Test
- API-610 Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries
- API-661 Air Cool Heat Exchangers for General Refinery Service
- API-RP 520 Sizing, Selection and Installation of pressure Relieving Devices in Refineries
- API-RP 521 Guide for pressure relieving and Depressurization Systems
- API-2510 Design and Construction of LPG Installations
- API MPMS Manual of Petroleum Measurement Standards

American Society of Mechanical Engineers

- ASME B31.3 Chemical Plant and Petroleum Refinery Piping
- ASME B31.8 Gas Transmission Distribution and Piping Systems
- ASME B31G Manual for Determining the Remaining Strength of Corroded Pipelines: A supplement to B31.3
- ASME V NDT for Pressure Vessels
- ASME VIII Boiler and Pressure Vessel Code
- ASME IX Welding
- ASME/ANSI B16.5 Pipe Flanges and Flanged Fittings
- ASME/ANSI B16.9 Factory-Made Wrought Steel Buttwelding Fittings
- ASME/ANSI B16.11 Forged Steel Fittings, Socket-Welding and Threaded
- ASME/ANSI B16.21 Nonmetallic Flat Gaskets for Pipe Flanges
- ASME/ANSI B16.34 Steel Valves, Flanged and Butt-Welding End
- ASME/ANSI B73.1 Horizontal End Suction Centrifugal Pumps for Chemical Process

American Society for Testing and Materials

- ASTM A53 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
- ASTM A105 Specification for Forgings, Carbon Steel for Piping Components
- ASTM A106 Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
- ASTM A182 Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temp Service
- ASTM A193 Alloy-Steel and Stainless-Steel Bolting Materials for High-Temperature Service
- ASTM A194 Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High Temperature Service
- ASTM A234 Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures
- ASTM A312 Seamless and welded austenitic stainless steel pipe

- ASTM A333 Specification for Seamless and Welded Steel Pipe for Low Temperature Service
- ASTM A350 Standard Specification for Carbon and Low Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components
- ASTM A403 Specification for wrought austenitic stainless steel piping fittings

Tubular Exchanger Manufacturers Association (TEMA)

Manufacturer's Standardization Society

- MSS-SP-44 Steel Pipeline Flanges
- MSS-SP-75 High Test Wrought Butt Weld Fittings
- MSS-SP-97 Integrally Reinforced Branch Outlet Fittings

Electrical

In addition to QGM Engineering Design and Construction Standards, the latest edition of following codes and standards shall be adhered to for the electrical design:

- ANSI American National Standards Institute
- API American Petroleum Institute RP-500
- FM Factory Mutual
- IEEE Institute of Electrical and Electronic Engineers
- NACE National Association of Corrosion Engineers Standard RP-0169-92
- NEMA National Electrical Manufacturers Association
- NESC National Electrical Safety Code - ANSI C2
- NFPA National Fire Protection Association
- NFPA 70 National Electrical Code
- UL Underwriters Laboratories

Instrumentation and Control

American Gas Association

American Petroleum Institute

- API 551 Process Measurement Instrumentation
- API 554 Process Instrumentation and Control

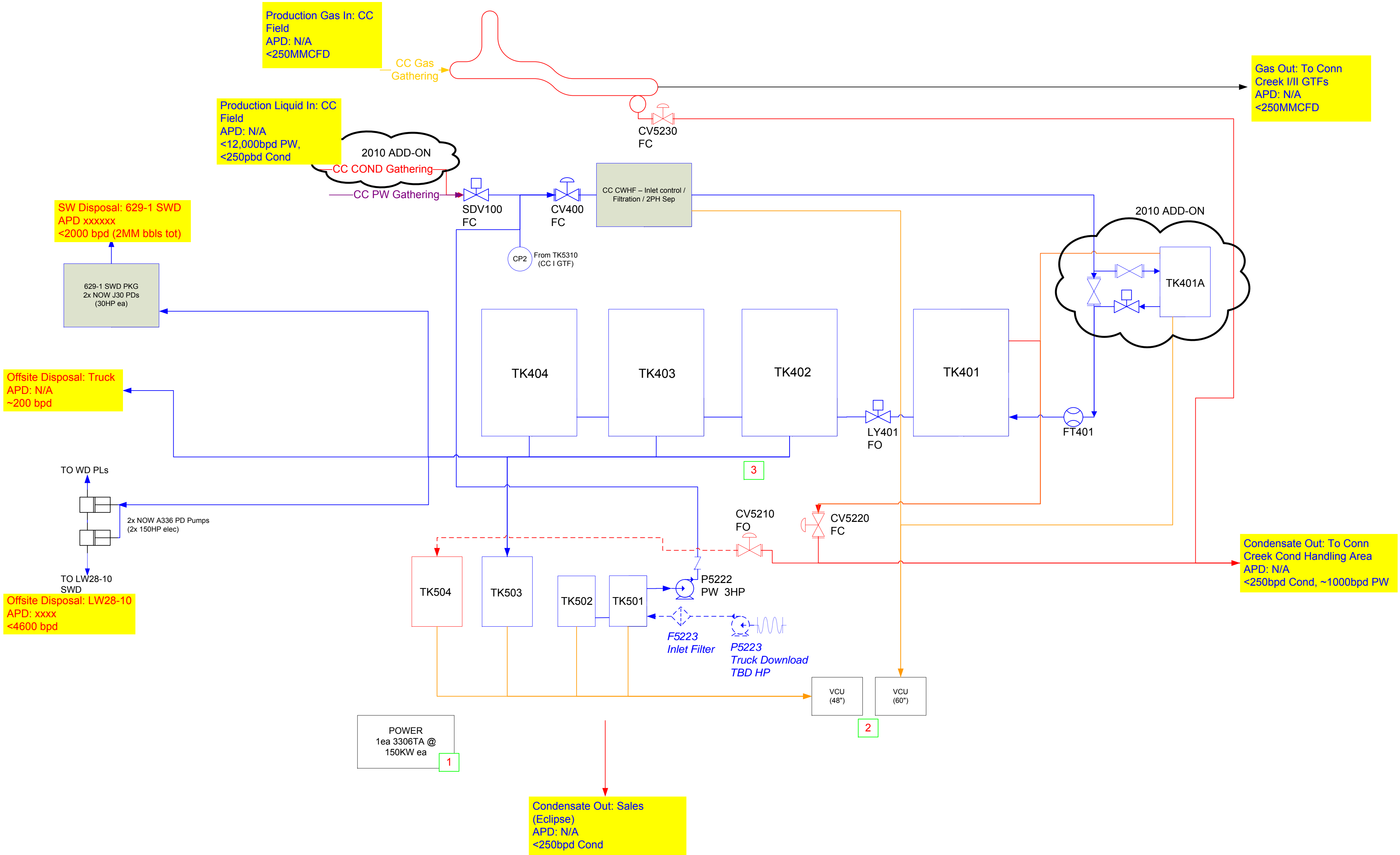
Instrument Society of America

- ISA-S12.1 Electrical Instruments in Hazardous Locations
- ISA-RP12.1 Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations
- ISA-S12.12 Electrical Equipment for Use in Class 1, Division 2 Hazardous Classified Locations

National Electrical Manufacturers Association

National Fire Protection Association

Cascade Creek Central Water Handling Facility
(CC CWHF) Process Flow Diagram



OXY USA WTP LP

CENTRAL WATER HANDLING FACILITY

OPERATING PLAN

The proposed operation of Central Water Handling Facility (CWHF) is intended to handle produced water gathered from Oxy's natural gas well sites in the area. Produced water will be transported primarily via existing pipelines. In the areas of Oxy's operations not currently serviced by pipelines for produced water, trucks will be utilized for transport of water to the CWHF. Prior to transport of water to the CWHF, residual oil or condensate will be allowed to separate by gravity from the produced water and then removed via a series of gravity separator tanks on the well pads. After the first stage of residual oil/condensate removal at the well pads, the water will be transported to the facility.

After the water is transported to the facility, it will be stored in tanks configured to allow for additional gravity separation followed by treatment through a series of filters and an additional 2-phase separator. Oxy will comply with all Colorado Department of Public Health and Environment (CDPHE) air emission standards for the proposed holding tanks. The high emission tank system will be a closed vapor control system utilizing one or more enclosed-flame combustors, similar to those used on producing wells, to collect and destroy hydrocarbon emissions. The combustor destruction efficiency will meet or exceed the appropriate CDPHE requirement for air-emission health standards. From the facility's settling tank batteries, the water will then be pumped to existing storage ponds for future reuse, or pumped to Oxy's injection wells or trucked off-site for disposal.

The CWHF will be accessible to Oxy personnel and contractors 24 hours-a-day, 365-days-a-year. The CWHF will generally be unmanned; however, daily inspections of the facility will be conducted by local operation personnel. Oxy assumes that the supporting tank system will be cleaned out on annually or as needed.

Currently Oxy is generating approximately 1,000 barrels per day (bpd) of produced water, but based on future production estimates Oxy plans to beneficially reusing and/or dispose of more produced water. Oxy's current estimates for processing water at the CWHF anticipate up to 3,000 bpd, passing through the CWHF but this volume could increase if Oxy's drilling and production activities were to expand. Oxy current economic projections include plans to dispose of a minimum of 1,000 bpd of produced water through underground injection. During completion operations Oxy utilizes 25,000 barrels of treated produced water per well.

Oxy has incorporated the facility's disturbed area into its existing stormwater management plan, CDPHE permit no. COR 038414. Oxy will install construction and operational best management practices to control and prevent the discharge of sediment and erosion as identified by CDPHE standards. Moisture collected on the site will be directed away from the site to drainage ditches and to detention ponds located at various locations the site.

The current dust control measures used on existing Oxy operations have been extended to this site and its access roads. The primary method that will be used will be to apply water to the roads accessing this facility as needed to control dust. See site layout and grading plan for further detail of moisture and dust control.

Oxy has incorporated the facility into its existing spill prevention, control, and countermeasure plan to prevent the discharge of petroleum products from storage tanks. Oxy will comply with all appropriate Colorado Division of Oil and Public Safety standards associated with storage tanks and tank batteries.

Oxy is utilizing one 150 kwatt diesel generator and one 350 kwatt diesel generator to provide power for the CWHF. None of the equipment at the CWHF facility is anticipated to generate significant noise. All noise generated at the CWHF is at or below the db(A) thresholds stipulated by Garfield County Code and the COGCC regulatory requirements.

All records on the site, including the daily logs, are first created filled in manually, signed by the responsible operator, and filed at Oxy's Cascade Creek Field Office. Documents may also be scanned and stored in the appropriate electronic file for access by all management personnel. The original record is stored in a 3-ring binder and kept at the Field Office site for a minimum of 6 months. The original records are then sent to the regional office (Grand Junction, CO) for storage. Oxy will manually record the following system parameters as well as generate electronic tracking and data storage to maintain safe operation of the facility. These points will be incorporated into operational checklists that track additional data related to the facilities and allow fine tuning of systems and operational capabilities. These checklists will be revised, as necessary, to reflect current operating and regulatory requirements.

OPERATIONAL PROCEDURES FOR DAILY/MONTHLY ACTIVITIES

1. Upon completion of water movement, lines shall be purged of all liquids to prevent freezing, pumps shall be drained and properly secured, and all valves shall be secured properly.
2. Plant operators will perform inspection according to daily readings sheet for the CWHF, capturing all monitoring points that are currently configured into Delta V our HMI program.
3. Operator shall inspect pressure regulators and gauges for functionality.
4. All appropriate filters will be inspected and replaced according to the condition of the filter or the regular service interval.
5. All fire protection and prevention equipment will be checked on a monthly basis.
6. Inspection of CWHF equipment will be conducted daily according to the list attached to this document.
7. Check Tank Level (TK401/402/403/404, TK501/502/503/504) – Daily
8. Check Pump Pressure (PT401A/B, PT402A/B) – Daily
9. Check Inlet Pressure: PIC400 Setpoint, PT403 Pressure – Daily
10. Check Inlet Filtration: Filter differential pressure – Daily

SYSTEM INTEGRATED PROTECTION (AUTOMATED/MECHANICAL)

Tanks

All – Secondary Containment

TK501/502/503/504 – 18' Crossover connection (Spill mitigation)

TK401/402/403/404 – High Level Alarm (Callout), High High Level Shutdown

TK501/502/503/504 – High Level Alarm (Callout), High High Level Shutdown

Inlet Flow

Pressure Control (PCV400, SDV400) – High Pressure Shutdown

Pumps

PTs (P401/402) – Discharge High Pressure Shutdown, Suction Low Pressure Shutdown

Injection Package (629-1 SWD) - Discharge High Pressure Shutdown, Suction Low Pressure Shutdown

Vapor Control

VCUs – Operation time, Fail to Ignite Alarm (Callout)

Month

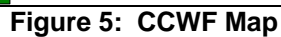
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Month

February	23	24	25	26	27	28
Equipment Designation						
PIC 400 SP						
PT 403 B						
Filter D.P.						
TK-401 Total Level						
TT-401						
TK-402 Total Level						
TT-402						
TK-403 Total Level						
TT-403						
TK-404 Total Level						
TT-404						
LV-5250 SP						
LV-5250 CV						
TK-501 Level						
TK-502 Level						
TK-503 Level						
TK-504 Level						
TK-5235 Level						
TK-5310 Level						
PT 401 A						
PT 401 B						
PT 402 A						
PT 402 B						

[illegible]

NTS
NORTH





Planning~Preparedness~Prevention

Emergency Response Plan (ERP)

Mesa County Dispatch	(970) 242-1234
Garfield County Dispatch	(970) 625-8095
St. Mary's CareFlight Helicopter	(970) 332-4923
Poison Control Hotline	(800) 222-1222
CHEMTREC	(800) 424-9300

Rockies, Mid-Continent Assets
2754 Compass Drive, Suite 170
Grand Junction, CO 81506
(970) 263-3600

24 Hour OXY Emergency Reporting (970) 248 - 0497
rev4. 06/25/08

NOTE: The hard copy ERP Manual is an uncontrolled document. Updates to the contact phone list will be distributed quarterly to personnel with ERP Manual. Any questions or concerns should be directed to OXY-HES.



This booklet is intended to provide general information about natural gas facilities owned and operated by OXY and guidance for conducting emergency response operations, which cannot be handled in a routine manner. The information provided will help to increase an understanding of OXY operations and help in providing assistance to the general public and to OXY should unexpected conditions arise which create a concern for public safety. This document is designed to provide guidance for conducting emergency response operations and for meeting the obligations of OSHA in 29 CFR Part 1910.38-39, "Employee Emergency Plans and Fire Prevention Plans".

Emergency -A serious situation or occurrence that happens unexpectedly and demands immediate action.

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Introduction TO The ROCKIES

OXY-Rockies owns and operates natural gas exploration and production fields within Garfield County, Colorado. This operation includes drilling, producing wells with associated production equipment and structures, several miles of natural gas and water gathering lines, a compressor station and a natural gas processing plant. The district office for Rockies is located in Grand Junction, Mesa County, Colorado. The corporate headquarters and support office for OXY-Rockies operations is in Houston, Texas.

Most of the OXY-Rockies operations in Garfield County are located in rugged terrain, away from public access or direct influence. The enclosed maps show the general route of the field roads, well-site locations and major above-ground facilities.

Natural gas is a safe, clean, dependable fuel used in millions of homes for cooking, heating, cooling and drying. It is also used by many commercial and industrial customers. Although typically safe to us, natural gas is an energy source and must be properly handled and does require a certain amount of caution when being produced and used. Natural gas is not poisonous; however, it does displace oxygen in enclosed spaces and may cause suffocation.

In its pure state, natural gas is odorless. Odorants, in low concentrations, are added when the gas enters local distribution systems for safety purposes to serve as a warning of natural gas presence. DO NOT trust your sense of smell to identify a gas leak. The most effective method used by natural gas companies to locate leaks is with an instrument designed to "sniff" or locate leaks. A pipeline leak can be indicated by the following signs: (1) blowing sound; (2) dirt being blown into the air; (3) bubbles or water being blown into the air when the pipeline is located in a water source; (4) fire emanating from the ground or burning above the ground; (5) vegetation turning brown on or near the right-of-way; (6) persistent odor associated with natural gas.

Natural gas is lighter than air and will not travel or accumulate close to the ground, as will liquefied petroleum gas (LPG) or gasoline fumes. It will rise quickly and be diluted in the atmosphere unless it is trapped within an enclosure. In order for natural gas to burn, it must be combined with air to a perfect mixture. When the gas is between 4 – 14% combined with air, it will readily ignite.

Natural gas is compressible. It is compressed before entering transmission pipelines. OXY-Rockies compressor and pipeline systems fully comply with state and federal standards for construction and operation. For production purposes, natural gas may also require the reduction and/or elimination of excess fluids and hydrocarbons. Separators and triethylene glycol dehydration units are located at well locations and at the Conn Creek Treating Facility. The OXY-Rockies Conn Creek Treating Facility treats incoming natural gas for reduction of carbon dioxide through the use of Diethanolamine (DEA), as required prior to acceptance into the distribution pipelines. The gas processing facility is not staffed 24 hours per day; however, emergency contacts are posted at the entry to the facility or with the 24 hour security guard force at the property entrance. Internal operations are monitored through electronic output with alerting capabilities 24 hours per day, 7 days per week. This facility is located on OXY property. There are no residents within 1 mile of the facility.

Public Safety

OXY-Rockies has operating procedures in place that are intended to protect the public and its employees from undue harm. In addition, the Company follows strict codes of compliance for the protection of public and Company property and the natural environment. When a concern for public safety is encountered within the OXY-Rockies area of operations, **OXY-Rockies should be notified immediately!!!** OXY-Rockies employees and consultants are trained and equipped to handle unexpected conditions associated with the Company's natural gas production, gathering and processing systems. Emergency response organizations will be utilized where necessary and to assist with the public and neighboring properties during emergencies.

The following procedures cover emergency response guidelines that address anticipated emergency scenarios and define training required for employees engaged in oil or gas exploration and production operations. The degree to which this emergency response plan will be activated will depend entirely on the nature of the occurrence.

The Rockies ***Employee Emergency Response (ERP) Manual*** will be reviewed and updated annually to reflect current activity and to increase effectiveness of the plan through discussions among all people involved. This ERP has been shared with Garfield County officials including the Local Emergency Response Commission (LEPC). The plan has also been distributed to the Mesa County Fire and Emergency Services' Department in DeBeque, Colorado. OXY-Rockies coordinates routine visits to the OXY project area with the local responding units to better familiarize the responders and the OXY-Rockies employees with changes to current facilities, locations and hazardous substances which may be encountered during an actual emergency. These visits may include providing emergency services with access points, safe approach procedures and chemicals used and/or stored on OXY property. The routine site visits also include training for OXY employees and contractors on project layout, established muster locations and fire protection equipment. Many times, this information can mean ready control of a fire or other emergency instead of a disaster.

Emergency Response Plan (ERP) Outline

I. Emergency Recognition and Prevention

In the event of an emergency resulting from industrial accident, forces of nature, or enemy action, there are certain problems that can be anticipated. The purpose of this plan is to outline the responsibility for meeting such problems and to establish methods for handling the emergency with the least exposure to personnel and property.

For the purpose of this plan, an emergency is considered to be *any condition which requires assistance over and above that which can be supplied by the normal personnel present at the time or which cannot be handled in a routine manner.*

A first aid incident or minor fire which is limited to a small area, and which can be handled by the personnel present, does not fall under this plan.

An emergency may include a medical emergency, fire; severe weather, explosion, uncontrolled release of natural gas or enemy action.

II. Emergency Alerting and Response Procedure

Once an employee recognizes the occurrence of an emergency, he/she will notify their immediate supervisor who will determine if the emergency is of such a magnitude that outside help will be needed. This judgment may be influenced by the nature of the emergency and the presence of hydrocarbon vapors. If help is needed, the immediate supervisor will take the following steps:

Notify the appropriate lines of authority and emergency response agencies as follows:

- A. Notify DeBeque Fire Protection District.
- B. Call law enforcement officers to help control traffic and the public. If roadblocks are required and established during an emergency, advise the control points what outside help may be expected so that they can be admitted to the project area.
- C. Consider the necessity of evacuating any residents in the area. At the current time there are no residents within the project area. There are however ranching interests in the area that may need notification.
- D. Establish contact with Civil Defense, Electric Companies, Gas Companies or other service organizations as needed.
- E. Contact Doctors, Hospitals, HAZMAT and ambulances as necessary.
- F. Contact any outside help necessary, such as construction contractors, tank trucks and other producers in the area which may be affected.
- G. Maintain communications and information flow with OXY-Rockies and all potentially affected personnel.

III. Personnel Roles and Lines of Authority

In the event of an emergency involving injury to OXY employees and/or contract personnel, immediate care shall be provided to the injured to abate any life-threatening injuries (e.g.; cardiac arrest, breathing stopped, and profuse bleeding).

Notification to OXY-Rockies management of any Health, Environment and Safety (HES) incident shall be made as soon as possible after the incident so that additional steps can be taken as needed. Emergency response agencies as listed on the cover page of this plan shall be notified as needed.

In the case of a serious emergency, the supervisor, or the designee shall notify the OXY-Rockies Operations Manager and HES Personnel. Notification shall then be made to the General Manager and the Occidental Oil and Gas Corp. (OOGC) HES Department, as soon as possible, in accordance with OOGC Procedure 60.400.110 "Incident Reporting and Investigation".

It is essential that all personnel are familiar with the location, operation and properly trained on fire extinguishers. Personnel should be thoroughly familiar with all valves necessary to isolate the source of any natural gas leak, pipeline rupture, processing facility failure or other production related emergency. The location of all utility control points should be known by plant and field personnel, i.e., electric switch boxes, water and gas control valves.

IV. Site Security and Control

The supervisor or designee shall be responsible for assigning company employees or contracted security forces to provide traffic control and establish a secure perimeter prior to being relieved by local emergency response personnel.

V. Evacuation Routes and Procedures

Depending on the emergency, personnel shall evacuate to a location upwind, if possible. Personnel will meet at the designated safe area and a head count will be taken by the supervisor or the designee to ensure that everyone is accounted for. Evacuation routes, procedures and pre-selected muster points should be identified and confirmed at each pre-job and regularly scheduled safety meeting.

VI. Media Guide

All inquiries/requests for information from the media and the public should be referred to the OXY-Rockies Operations Manager or Asset Manager.

Emergency Procedure:
Fire in the Grand Junction Office
2754 Compass Drive, Suite 170



Notifications

- 911 (GJ Fire Department)
- OXY Office Warden
- Other OXY Employees

Emergency Tools

- Nearest Fire Extinguisher(s)

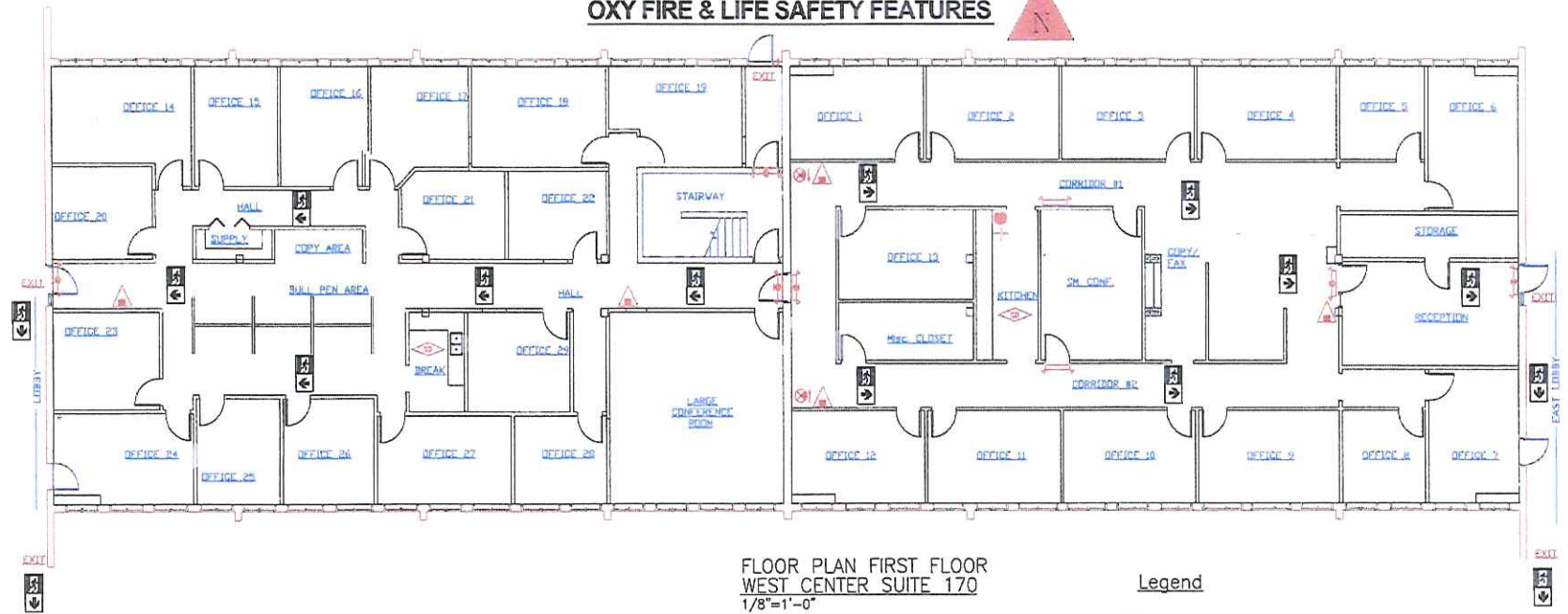
Required Forms To Complete (post-incident)

- Initial Incident Report Form
- Accident/Incident Statement Form
- Fire Report Form

1. If safe to do so, determine the location of the fire in the building.
2. Warn others in building; sound alarm.
3. The Site Coordinator or designee will sound the alarm if it has not been done and if time allows. Make sure others are aware of the danger and have evacuated the building.
4. If fire is in the incipient stage and it can be done safely, extinguish the fire. If not, proceed to step #5.
5. Leave the building quickly through the safest exit.
6. Meet in designated muster point/gathering area. **The Grand Junction personnel shall meet at the front of the office building (SOUTH exit) across Compass Drive in the field. (See Map on next page)** If wind or other conditions prevent using this location as the muster area, **the alternative muster area will be in the entrance driveway to Harley Davidson building located southwest of the OXY-Rockies office building.**
7. Make sure all OXY-Rockies employees are accounted for.
8. Call emergency personnel – **DIAL 911**
9. Contact OXY-Rockies Operations Manager.
10. If warranted and safe to do so, notify adjoining businesses and/or residents.
11. Notify other company personnel to perform previously discussed & planned roles to secure the area, assist in first aid, assist in evacuation, guide EMS, etc.

Grand Junction Offices Map of Fire & Life Safety Features

OXY FIRE & LIFE SAFETY FEATURES



FLOOR PLAN FIRST FLOOR
WEST CENTER SUITE 170
1/8"=1'-0"

Legend

- Smoke Detectors
- Fire Extinguishers (ABC)
- First Aid Kit
- Automatic External Defibrillator
- Emergency EXIT Routes
- EXIT Lighting
- Emergency Lighting with illuminated EXIT sign
- Emergency Lighting
- Fire Hydrant (Fire Department Access)

Compass Drive

- Area of Refuge (Muster Point)
Area South of Compass Drive

Revised: 11-05-07 By: Jon Hamill

Emergency Procedure:
Medical, Fire and/or Explosion, or Wildland Fire
Cascade Creek Lease



Conn Creek Treating Facility/Cascade Central Water Facility

Notifications

- Mesa Co. Dispatch: 970.242.1234
- Other OXY Employees
- Other Contractors

Emergency Tools

- Nearest Fire Extinguisher(s)
- Tune to 106.7 FM *OR* Weather Channel on CB Radio
- CB Radio/OXY Radio
- Vehicle (evacuation purposes)
- MSDS book (*field office or plant*)
- St. Mary's CareFlight Helicopter #

Required Forms To Complete (post-incident)

- Initial Incident Report Form
- Accident/Incident Statement Form
- Fire Report Form

1. Survey the scene. If safe to do so, determine the nature and extent of the emergency. Determine proximity of any hazardous substances that may change the course of the emergency if exposed.
2. If fire is in the incipient stage and it can be done safely, extinguish the fire with a fire extinguisher or other extinguishing agent, fire blanket, water, etc. If not proceed to step #3.
3. If it is safe to do so, stop any unwanted release of flammables and de-energize unwanted power/energy sources, to include closing natural gas pipeline or facility valves. If not, proceed to step #4.
4. If the area is unsafe, move to a safe area. Isolate yourself and others from the area immediately and sound alarm (ESD/blow horn).
5. Notify Emergency Response Personnel

DIAL → DeBeque (Mesa County Dispatch (970) 242-1234) or Garfield County Dispatch (970) 625-8095**

DO NOT USE "911" from a satellite phone. You will not reach a local dispatcher.

It is critical that the following information is provided when emergency services are needed in the OXY field:

- Name and Phone Number of Caller.
- Exact Location of Emergency- Provide Lat/Long and Elevation, at a minimum. This can be found in all Drill Plan Books located at Company Man and Tool Pusher Trailers. It is also located on new location signs.
- If Lat/Long is not known, provide driving directions and plan to meet responding agencies at a suitable rendezvous point and inform personnel where that will be and that someone will be at the appointed place to meet them. Give landmarks, mileage and any other information to help responders find your location.

- Be aware that it may require more than one person to guide emergency personnel. (*ambulance and fire may show up at different times*)
 - Determine any hazardous substances located in or near the incident location
 - Provide number of victims.
 - Provide Mechanism of Injury (i.e. motor vehicle rollover, slip/trip/fall from elevated level, struck by heavy object, head-on collision, etc.)
 - Describe, to the best of your ability, the Type of Injury(ies) (i.e. Amputation, burn, sprain/strain/fracture, crushing, poisoning, loss of consciousness, etc.)
 - **STAY ON LINE WITH THE DISPATCHER UNTIL TOLD TO HANG UP. DO NOT GET AGGRAVATED WITH THE TIME TAKEN TO GATHER INFORMATION. THE DISPATCHER WILL SEND ASSISTANCE WHEN THEY HAVE ALL PERTINENT INFORMATION GATHERED. THEY WILL NOT SEND RESPONDERS INTO A HAZARDOUS ENVIRONMENT. DISPATCHERS ARE TRAINED TO GATHER INFORMATION FOR THE RESPONDERS AND THEY ARE YOUR LINK TO GETTING HELP AS SOON AS PRACTICAL.**
6. If the accident is severe enough, then it is feasible to call in flight support from St. Mary's CareFlight Helicopter. Refer to the attached brochure on "How To Prepare A Landing Zone" and to area maps with designated helipad locations.
7. Notify Supervisor or their designee
Supervisor or their designee should:
- Make sure EMS has been activated (*See Item 5*)
 - **Notify other company personnel to perform previously discussed & planned roles to secure the area, assist in first aid, assist in evacuation, guide EMS etc.**
8. Report any incident to the OXY-Rockies Management Team IMMEDIATELY.
- ** In some instances it may be more practical and efficient to notify the supervisor first and have them call EMS. See attached Emergency Contact List and the OXY-Rockies Contact List.

Key Tips On How To Recognize Injury(ies) and Provide Initial Care:

- Activate Emergency Medical Services' Assistance **BEFORE** it is too late - Call for help early. If it looks bad, feels bad, smells bad; it is probably bad.
- **ALWAYS** activate the local (DeBeque) ground emergency service, even if you have notified CareFlight. Many times, the helicopter cannot reach an area because of bad weather conditions or a higher priority call out. Ground ambulance will verify landing zones and can provide guidance into an area for the helicopter.
- **DO NOT CAUSE MORE HARM AND DO NOT BECOME ANOTHER VICTIM BY RUSHING INTO A HAZARDOUS ENVIRONMENT.**
- Only provide care to the level of your training.
- **DO NOT** move a victim unless there is imminent danger that could cause more harm.
- If available, communicate with CareFlight through the Emergency Services' radio channel for all landings. The frequency is on all OXY -ROCKIES radios.

Emergency Contact List

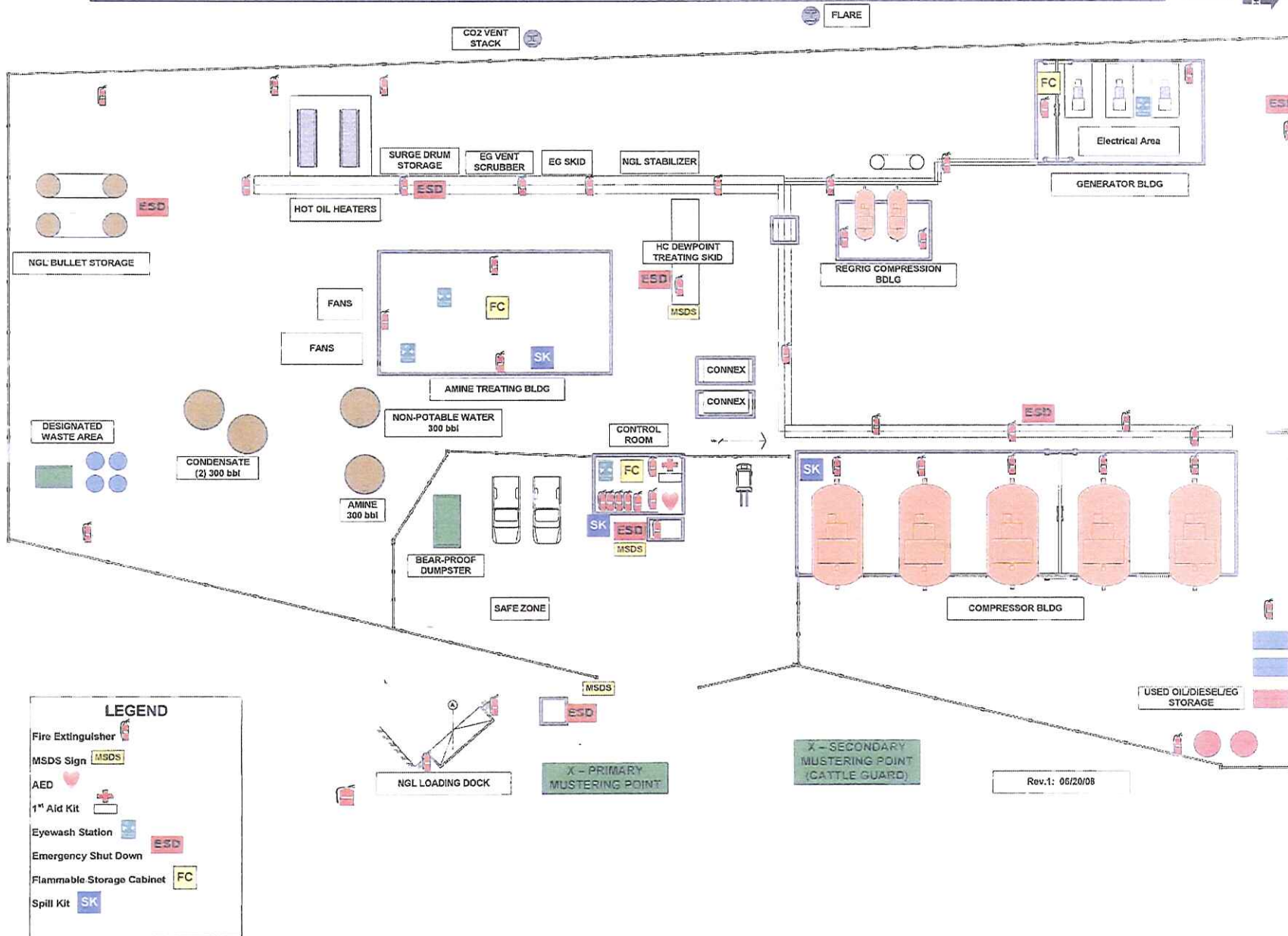
- DeBeque (Mesa County Dispatch) (970) 242-1234
- Garfield County Dispatch (970) 625-8095
- Rio Blanca County Dispatch (970) 868-9620
- St. Mary's CareFlight Helicopter (970) 332-4923
- KinderMorgan Compressor Station (970) 640-3438
- PTI Transport Dispatch (970) 242-1871
- Gas Control 24 Hr. (877) 335-3680
- Bureau Land Management (970) 257-4800
- US Army Core of Engineers (202) 761-1001
- Poison Control Hotline (800) 222-1222
- CHEMTREC (800) 424-9300
- Division of Wildlife (970) 255-6100
- OXY 24 Hour Emergency (970) 248-0497

****DO NOT USE "911" from a satellite phone. You will not be able to reach a local dispatcher.****

In many of our work areas, cell phones will not connect with a local dispatch. The above numbers can be used from any phone and will reach our immediate response teams. It is very crucial that each individual follows this procedure to ensure an appropriate response time of the emergency personnel.

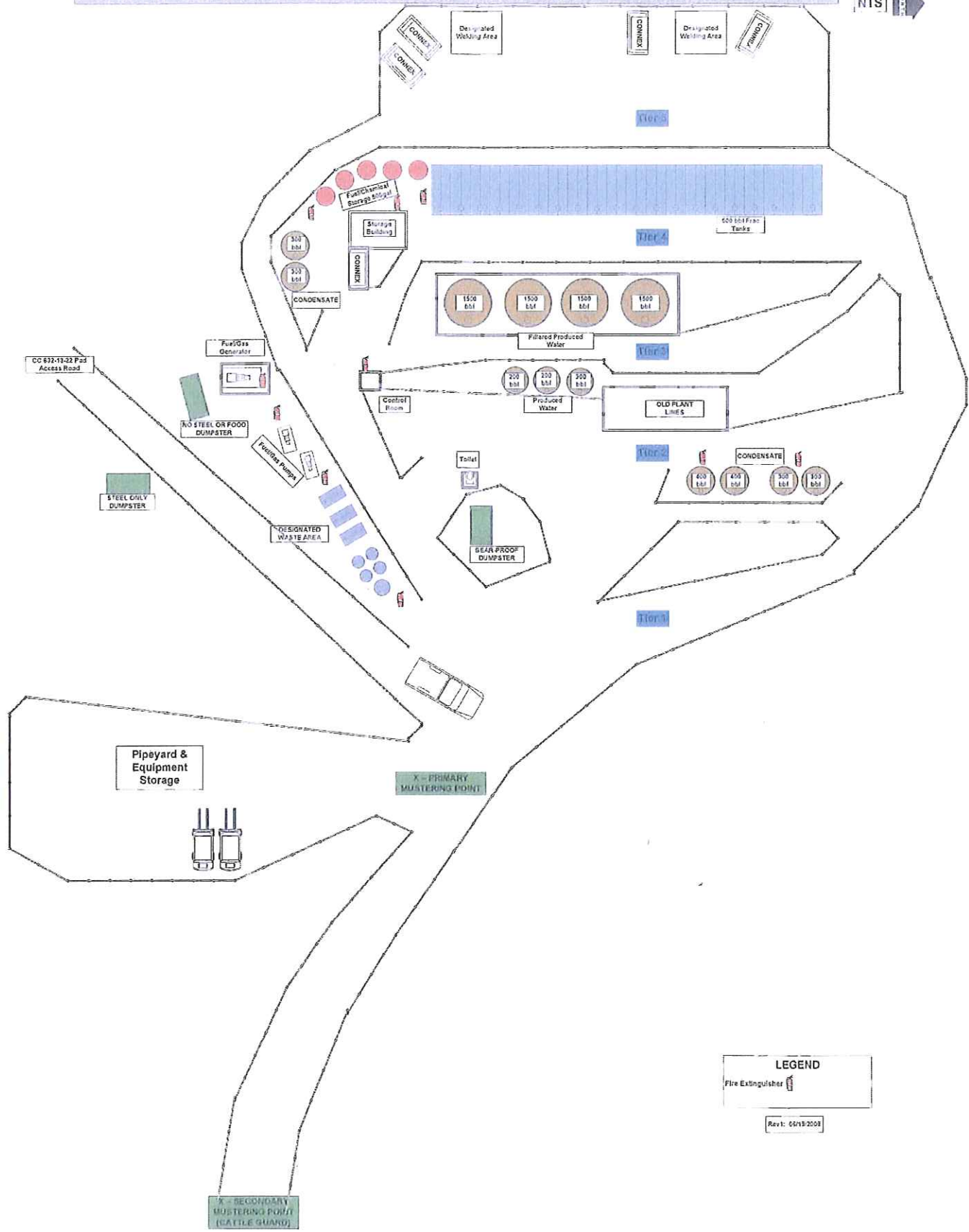
CONN CREEK1 TREATING FACILITY FIRE & LIFE SAFETY FEATURES

NTS



CASCADE CENTRAL WATER FACILITY FIRE & LIFE SAFETY FEATURES

NTS



Emergency Procedure: Vehicle Collision/Incident



Notifications

- Police (*Mesa Co. Dispatch: 970.242.1234 or 911*)
- Supervisor
- HES Group

Emergency Tools

- CB Radio/OXY Radio
- Vehicle Registration
- Insurance Card
- 3-Day Emergency Preparedness Kit (*OXY Employees*)

Required Forms To Complete (post-incident)

- Initial Incident Report Form
- Driver's Accident Report Packet (*glove-box*)

All vehicle accidents, including those that do not involve personal injury or damage to a vehicle, require the completion of a Driver's Report of Vehicle Accident immediately following the accident. Vehicle accidents occurring in leased vehicles and personal vehicles being used for company business must be reported.

If injury results from a vehicle accident, it will also be necessary to complete an injury report.

A. Employee Injury

1. You must immediately report to your supervisor any injury sustained at work, no matter how slight the injury may be. Failure to report an injury promptly could result in the Company questioning a claim at a later date.
2. Your immediate supervisor will investigate the injury and prepare the appropriate reports.

B. Vehicle Collision

1. A vehicle collision is defined as any vehicle contact or damage requiring repairs to a Company vehicle, another vehicle, injury to a pedestrian, animal, or third party or damage to Company property.
2. If you are involved in a vehicle collision:
 - a. **STOP. NEVER LEAVE THE SCENE OF AN ACCIDENT.**
 - b. Obtain help for injured persons. Render "GOOD SAMARITAN" first aid if you are qualified to do so.
 - c. Notify police and a Company Supervisor.
 - d. Obtain necessary information at the scene. Exchange only driver's license number and insurance information with the other driver, but DO NOT make commitments. Simply state that you will report the collision to your company. Any liability will be determined by the Company and our insurance carrier. DO NOT express opinions or become involved in arguments.
 - e. Have witnesses provide you with their address and telephone numbers so they can be reached for follow-up statements regarding the collision.

OCCIDENTAL OIL AND GAS CORPORATION DRIVER'S REPORT OF VEHICLE ACCIDENT

Report all vehicle accidents immediately on this form regardless of amount of damage or loss. Do not discuss accident with anyone except company representative or police. In case of injury to others, or serious property damage, notify your supervisor at once. Be certain to secure the names and addresses of witnesses, bystanders, or people in the immediate vicinity who may have seen the accident or heard any statement made by persons involved.

GIVE DETAILS AS FULLY AS POSSIBLE

COMPANY DRIVER	1.a) <input type="checkbox"/> OPERATIONS b) <input type="checkbox"/> GAS PROCESSING c) <input type="checkbox"/> OTHER _____ 2. REGION/OFFICE _____ 3. FACILITY _____ 4. DRIVER _____ 5. DRIVER'S HOME ADDRESS _____ 6. CITY _____ 7. STATE _____ 8. JOB CLASSIFICATION _____ 9. DATE EMPLOYED _____ 10. AGE _____ 11. DRIVER'S SOC. SEC. NUMBER _____ 12. DRIVER'S LICENSE NUMBER _____ 13. DRIVER'S LICENSE: a) <input type="checkbox"/> OPERATOR b) <input type="checkbox"/> COMMERCIAL 14. LICENSE RESTRICTIONS: a) <input type="checkbox"/> Yes b) <input type="checkbox"/> No IN COMPLIANCE WITH THESE RESTRICTIONS? a) <input type="checkbox"/> Yes b) <input type="checkbox"/> No OTHER OCCUPANT'S NAMES: _____
ACCIDENT SUMMARY	15. ACCIDENT LOCATION: _____ 16. CITY _____ 17. STATE _____ DATE OF ACCIDENT: 18. MONTH _____ 19. DAY _____ 20. YEAR _____ 21. TIME: HOUR _____ a) <input type="checkbox"/> AM b) <input type="checkbox"/> PM 22. PURPOSE OF TRIP: _____ _____ _____ _____ _____
COMPANY VEHICLE	23. OWNER: a) <input type="checkbox"/> OCCIDENTAL b) <input type="checkbox"/> OTHER 24. COMPANY VEHICLE NUMBER _____ 25. VEHICLE TYPE: a) <input type="checkbox"/> AUTO b) <input type="checkbox"/> PICKUP c) <input type="checkbox"/> TRUCK _____ TON CAPACITY _____ 26. YEAR: _____ 27. MAKE: _____ 28. DESCRIBE DAMAGE TO VEHICLE: _____ _____ 29. ESTIMATED COST TO REPAIR COMPANY VEHICLE: _____
OTHER VEHICLE(S)	DRIVER: _____ YEAR _____ MAKE _____ OWNER'S ADDRESS: _____ CITY: _____ STATE: _____ OTHER OCCUPANT'S NAMES: _____ DESCRIBE DAMAGE TO VEHICLE: _____ _____ 30. ESTIMATED COST TO REPAIR VEHICLE(S): \$ _____ (ATTACH EXPLANATION IF MORE THAN ONE VEHICLE IS INVOLVED)
PERSONAL INJURIES	INJURED PERSONS' NAMES: _____ _____ NATURE AND EXTENT OF INJURIES: _____ _____ _____
OTHER PROPERTY DAMAGE	DESCRIBE PROPERTY DAMAGED OTHER THAN VEHICLES: _____ _____ 31. ESTIMATED COST TO REPAIR DAMAGE: \$ _____

(OVER)

32. LIGHTING (Check One)
a) ☐ Daylight
b) ☐ Dawn
c) ☐ Dusk
d) ☐ Night-lighted
e) ☐ Night-unlighted
33. ROAD CONDITIONS (Check One)
a) ☐ Dry
b) ☐ Wet
c) ☐ Icy
d) ☐ Snow
34. ROAD CHARACTERISTICS (Check All That Apply)
a) ☐ Paved
b) ☐ Unpaved
c) ☐ Straight
d) ☐ Curved
e) ☐ Flat
f) ☐ Hillcrest
g) ☐ Sloped
35. ROAD DESIGN (Check One)
a) ☐ Interstate
b) ☐ Highway
c) ☐ Expressway
d) ☐ City Street
e) ☐ Other
Number lanes _____

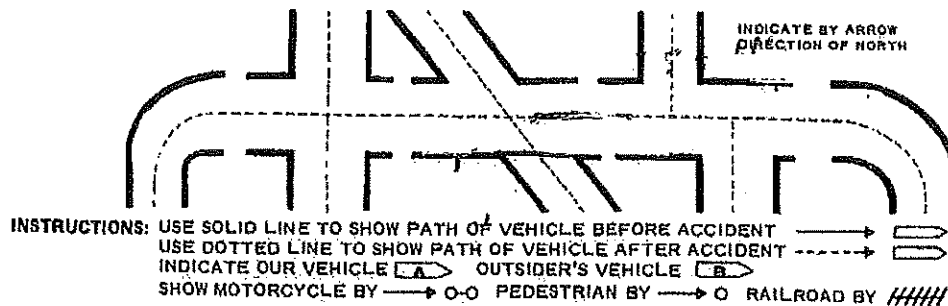
WHAT DRIVERS WERE DOING (Check One for Each)

36. COMPANY DRIVER
a) ☐
b) ☐
c) ☐
d) ☐
e) ☐
f) ☐
37. OTHER DRIVER
a) ☐ Going Straight
b) ☐ Overtaking, Passing
c) ☐ Making Right Turn
d) ☐ Making Left Turn
e) ☐ Making U Turn
f) ☐ Slowing
38. COMPANY DRIVER
g) ☐
h) ☐
i) ☐
j) ☐
k) ☐
l) ☐
37. OTHER DRIVER
g) ☐ Stopped in traffic
h) ☐ Stopped sign/light
i) ☐ Entering traffic
j) ☐ Parked
k) ☐ Backing
l) ☐ Other

CONTRIBUTING FACTORY BY EACH DRIVER (Check All That Apply)

38. COMPANY DRIVER
a) ☐
b) ☐
c) ☐
d) ☐
e) ☐
f) ☐
g) ☐
h) ☐
i) ☐
j) ☐
36. OTHER DRIVER
a) ☐ Speeding
b) ☐ Traveling too fast for conditions
c) ☐ Failed to yield right of way
d) ☐ Passed stop sign
e) ☐ Disregarded traffic signal
f) ☐ Drove left of center
g) ☐ Swerved to miss object
h) ☐ Following too closely
i) ☐ Made improper turn
j) ☐ Driver inattention
36. COMPANY DRIVER
k) ☐
l) ☐
m) ☐
n) ☐
o) ☐
p) ☐
q) ☐
r) ☐
37. OTHER DRIVER
k) ☐ Under influence of alcohol, drugs
l) ☐ Inadequate brakes
m) ☐ Driver fatigue
n) ☐ Improper lane change
o) ☐ Improper backing
p) ☐ Road defect
q) ☐ Mechanical defect
r) ☐ Tire defect

40. TYPE OF COLLISION: a) HEAD ON ☐ b) SIDESWIPE ☐ c) RIGHT ANGLE ☐ d) REAR END ☐
41. DAY OF WEEK: a) MON ☐ b) TUE ☐ c) WED ☐ d) THU ☐ e) FRI ☐ f) SAT ☐ g) SUN ☐
42. CITATION GIVEN TO: a) COMPANY DRIVER ☐ b) OTHER PARTY ☐ VIOLATION TYPE: _____
43. VEHICLE CARGO: _____; DATE OF LAST STATE VEHICLE INSPECTION: _____
44. ANY KNOWN DEFECTS ON VEHICLE PRIOR TO ACCIDENT? a) YES ☐ b) NO ☐ List: _____
45. WERE OCCUPANTS OF COMPANY VEHICLE WEARING SEAT BELTS? a) YES ☐ b) NO ☐
46. WERE OCCUPANTS OF OTHER VEHICLE(S) WEARING SEAT BELTS? a) YES ☐ b) NO ☐
47. HAD COMPANY DRIVER ATTENDED DEFENSIVE DRIVING COURSE? a) YES ☐ b) NO ☐



PLEASE COMPLETE THE SKETCH ABOVE SHOWING THE MOVEMENT OF THE VEHICLE(S).

PLEASE EXPLAIN HOW THE ACCIDENT HAPPENED: _____

HAVE YOU SUBMITTED REQUIRED REPORTS TO STATE AND LOCAL AUTHORITIES? a) YES ☐ b) NO ☐

WHAT WOULD YOU DO TO PREVENT A SIMILAR ACCIDENT? _____

Date of Report

Signature of Driver

Signature of Driver's Supervisor

72-285 (02-01)

Distribution: OOGC HES Department, P.O. Box 27757, Houston, TX 77227-7757

Emergency Procedure: Severe Thunderstorm/Flash Flood



Notifications

- Other OXY Employees
- Other Contractors
- Other Operators (*See Emer. Contact List*)

Emergency Tools

- Tune to 106.7 FM *OR* Weather Channel on CB Radio
- 3-Day Emergency Preparedness Kit (*OXY Employees*)
- OXY Radio/CB Radio

Required Forms To Complete (*post-incident*)

- Initial Incident Report Form

1. During threatening weather or if severe weather has been predicted, tune to and monitor local weather radio or news broadcasts. When a severe weather warning has been issued for any location in the area, immediately notify office and field personnel that may be affected.
2. If possible, inform others to tune into local weather newscasts to stay abreast of possible conditions and/or weather changes in their area.

3. In the office:

- Inform personnel. The Site Coordinator or other designee will insure personnel are aware of severe weather conditions.
- If damage is sustained refer to emergency procedures for "Medical and/or Fire and Explosion"

In the field:

- If time allows, notify others of your location and situation.
- Do not attempt to out run severe weather or flash floods.
- Seek shelter if available, otherwise stay in vehicle.
- Do not drive into flowing water.
- Do not park and take shelter beneath trees.
- Avoid exposed areas, ridgelines, natural washes
- If caught out of your vehicle in the open then proceed downhill to a less exposed side slope location. Avoid trees, fences, large rocks. Squat in the open on the balls of your feet with your head down. Cover ears with hands, elbows in, and wait the situation out.
- After Severe Weather or Flash Flood is clear notify others that you are okay, if possible.
- Provide assistance to others if you are capable.

4. Make appropriate company notifications of injuries or damage to company property.

Emergency Procedure: Severe Weather – Blizzard



Notifications

- Other OXY Employees
- Other Contractors
- Other Operators (*See Emer. Contact List*)

Emergency Tools

- Tune to 106.7 FM *OR* Weather Channel on CB Radio
- 3-Day Emergency Preparedness Kit (*OXY Employees*)
- OXY Radio/CB Radio

Required Forms To Complete (*post-incident*)

- Initial Incident Report Form

1. During threatening weather or if severe weather has been predicted, tune to and monitor local weather radio or news broadcasts. When a blizzard warning has been issued in the area, immediately notify office and field personnel that may be affected. Inform others to tune into local weather newscasts to stay abreast of possible conditions and/or weather changes in their area.

2. If a blizzard is underway:

- Inform personnel. The Site Coordinator or their designee will declare blizzard conditions. In blizzard conditions all personnel are responsible for reporting field travel and activity plans to the Site Coordinator or alternate. No travel or activity should be undertaken without a winter survival kit (warm dry clothing, water proof gear, water, food, matches, cell phone, etc.) and only with the approval of OXY ROCKIES management.
- The "Buddy" system is in effect during blizzard conditions. In addition to reporting travel activity and activity plans to Site Coordinator, all personnel will inform one other OXY person of travel and activity plans. Establish pre-determined check-in time(s) with "Buddy". Avoid false alarms by always checking in as planned.
- If personnel fail to check in, as agreed, notify OXY ROCKIES Field Manager and Operations Manager. Depending on situation, Field or Operations Manager will notify appropriate emergency personnel and begin search operations.

If stranded in blizzard conditions:

- If possible, notify others of deteriorating conditions along with your location and situation before communications are lost.
- **DO NOT** leave your vehicle unless absolutely necessary. Assure exhaust pipe is clear of obstructions and run engine only when needed to conserve fuel.
- If stranded away from your vehicle or if it is necessary to abandon the vehicle, seek shelter in a production unit or other stable structure and wait for help to arrive. If shelter is not available build a snow cave and wait for help. If caught outside of shelter, build a fire if possible.
- Try to stay dry. Change to dry and weather resistant gear.
- If you are caught with more than one person in a blizzard **DO NOT SEPARATE**. Provide assistance to others, if you are capable.
- Do not attempt to walk off the Mesa during blizzard conditions.

3. Make appropriate company notifications of injuries or damage to company property.

Emergency Procedure: Saltwater, Oil Spill, Uncontrolled Gas Release



Notifications

- Other OXY Employees
- Other Contractors
- Other Operators (*See Emer. Contact List*)

Emergency Tools

- Tune to 106.7 FM *OR* Weather Channel on CB Radio
- MSDS book (*field office or plant*)
- Emergency Response Guidebook (ERG)
- Oil Spill Kit (*field office, plant, safety trailer*)
- Wind direction (*nearest wind-sock*)
- Sample Kits (*field office*)

Required Forms To Complete (*post-incident*)

- Initial Incident Report Form
- Accident/Incident Statement Form
- Spill Report Form

1. If safe to do so, determine the nature and extent of the release and isolate the release. Be aware of hazardous substances or equipment in the area that may potentially create a change to the immediate emergency.
2. If the release can not be safely isolated, evacuate the premise and establish roadblocks to prevent others from entering.
3. Notify Supervisor or their designee
 - **Supervisor or their designee should:
 - If necessary, notify other company personnel to perform previously discussed & planned roles to secure the area or assist as operationally needed.
 - Begin cleanup and remediation procedures as soon as possible.
 - **Contact OXY ROCKIES IMMEDIATELY!!!**
 - Fill out and submit OXY-Rockies Initial Incident Report Form, in accordance with OXY policies and procedures.

** If sight is covered under the Spill Prevention Control and Countermeasure Plan, refer to it for further procedures.

Reportable quantities:

****Note: Report all spills/releases to OXY-Rockies no matter the quantity. OXY-Rockies will make the proper notifications to government agencies.**

- A spill is less than five barrels is not reportable to the COGCC, but reportable to OXY.
- A spills is greater than five barrels, shall be reported to COGCC.
- If the spill is greater than 20 barrels, then verbal notification shall be provided to COGCC within 24 hours.
- A spill of a refined petroleum product (hydraulic fluid, fuel, etc) greater than 25 gallons is reportable to CDPHE.

Emergency Procedure: Chemical Release/Spill



Notify Affected Personnel

- Other OXY Employees
- Other Contractors
- Other Operators (*See Emer. Contact List*)
- Mesa Co. Dispatch: 970.242.1234 (if needed)

Emergency Tools

- Tune to 106.7 FM *OR* Weather Channel on CB Radio
- MSDS Book (*field office or plant*)
- Emergency Response Guidebook (*ERG*)
- Chemical Spill Kit (*field office, plant, safety trailer*)
- Wind direction (*wind-sock*)
- Sample Kits (*field office*)

Required Forms To Complete (*post-incident*)

- Initial Incident Report Form
- Accident/Incident Statement Form
- Spill Report Form

1. If safe to do so, determine the nature and extent of the release.
 - Stay up wind
 - Locate Material Safety Data Sheets (MSDS), placards or labels that would help identify the chemical
 - Refer to Hazardous Communication (HAZCOM) program, OXY ROCKIES Chemical Inventory, placards, and labels for help in identifying the chemical and response procedures if necessary.
2. If there is no danger, isolate the release.
2. If the release can not be safely isolated, evacuate the premises and establish roadblocks to prevent others from entering the affected area.
3. Notify Supervisor or their designee
4. Supervisor or their designee should:
 - If necessary, notify other company personnel to perform previously discussed & planned roles to secure the area or assist as operationally needed. **
 - Contact local HAZMAT Response Team (**Mesa County Dispatch 970-242-1324**), **if needed** for immediate response and control of a hazardous chemical release.
 - **Notify OXY-Rockies IMMEDIATELY!!!**
 - Begin cleanup and remediation procedures as soon as possible.

**** If the spill is on public ground or the public might be in any danger, notify local emergency services.**

Notification Numbers for Release/Spill

***** All spills/releases are to be reported to OXY-Rockies immediately!!!**

1. Alonzo Hernandez, HES Superintendent (970) 985-6055
2. Jon Hamill, HES Specialist ⤵ (970) 985-0354
3. Daniel Padilla, Regulatory Advisor (970) 263-3637
 - Colorado Department of Public Health & Environment (CDPHE)
Denver, CO
Toll Free 24-hour Environmental Spill Reporting Line 1-877-518-5608
 - Colorado Oil & Gas Conservation Commission (COGCC)
Denver, CO
Toll Free Spill/Complaint Line 1-888-235-1101

Emergency Procedure: Earthquake



Notify Affected Personnel

- Mesa Co. Dispatch: 970.242.1234
- Other OXY Employees
- Other Contractors
- Other Operators (*See Emer. Contact List*)

Emergency Tools

- Tune to 106.7 FM *OR* Weather Channel on CB Radio
- CB Radio/OXY Radio
- Emergency Response Guidebook (*ERG*)
- MSDS Book (*field office or plant*)

Required Forms To Complete (post-incident)

- Initial Incident Report Form

If you are inside during an earthquake:

1. Immediately take cover under a table or desk, or stand in a doorway. In areas where cover is not available, kneel at the base of an interior wall, facing the wall and with head down and covered by arms.
2. Turn your body away from windows and mirrors.
3. Be alert for falling objects and stay away from overhead fixtures, filing cabinets, bookcases, and electrical equipment.

If you are outside during an earthquake:

1. Move to an open area away from buildings, trees, and power lines.
2. If unable to move to an open area, watch for falling objects.

If you are in an automobile during an earthquake:

1. Stop your vehicle in the nearest open area.
2. Stay in the vehicle until the shaking stops.

After an earthquake:

1. Be aware of the possibility of aftershocks.
2. If possible and it is safe to do so, evacuate the building as soon as the shaking has ceased. (Meet at the Primary Mustering Area-DeBeque Baseball Field)
3. Do not move injured persons unless they are in obvious immediate danger (from fire, building collapse, etc.)
4. Open doors carefully. Watch for falling objects.
5. Do not use elevators.
6. Do not use matches or lighters.
7. Limit use of telephone to calls for emergency services.

Emergency Procedure Terrorism Attack/Threat/Enemy Action



Notifications

- Mesa Co. Dispatch: 970.242.1234
- Other OXY Employees
- Other Contractors
- Other Operators (*See Emer. Contact List*)

Emergency Tools

- Tune to 106.7 FM *OR* Weather Channel on CB Radio
- CB Radio/OXY Radio
- MSDS Book (*field office or plant*)
- Emergency Response Guidebook (*ERG*)
- Wind direction (*wind-sock*)

Required Forms To Complete (*post-incident*)

- Initial Incident Report Form

1. There are (4) main types of terrorist activity to be aware of:

- ☐ Chemical
- ☐ Biological
- ☐ Radiological/Nuclear
- ☐ Explosives

2. Pay attention to the following **indicators**: (Any suspicious activity should be reported immediately.)

- ☐ Is the emergency response to a target hazard or target threat?
- ☐ Has there been a threat?
- ☐ Are there multiple (non-trauma related) victims?
- ☐ Are responders victims?
- ☐ Are hazardous substances involved?
- ☐ Has there been an explosion?
- ☐ Has there been a secondary attack/explosion?

If There Is **One Indicator**...

- ☐ Respond with a heightened level of awareness

If There Are **Multiple Indicators**...

- ☐ You may be on the scene of a terrorist attack
- ☐ Initiate response operations with extreme caution
- ☐ Be alert for actions against responders
- ☐ Evaluate and implement personal protective measures
- ☐ Consider the need for maximum respiratory protection or a full evacuation
- ☐ Make immediate contact with law enforcement for coordination

3. Evacuate the area immediately to the primary muster point (DeBeque baseball field), make notifications to immediate supervisor, HES Group, DeBeque Fire Department (970) 242.1234.

Appendix A

Fire Prevention Plan

Overview

→ Types of fires

- Lightning
- Smoking
- Flaring
- Hot Work
- Vehicle Hazards

→ When a fire breaks out:

- What to do?
- When to leave?
- Where to go?
- Muster points

→ Who/what is in danger?

- Temporary housing units
- Fire dangers/hazards

→ How to prepare for a fire?

- Evacuation drills/Training
- Flowchart

→ Fire prevention checklist

Introduction

The *Fire Prevention Plan* is a guide to help you know what to do and who to contact during a fire breakout in the mesa/valley where OXY has operations. According to the Colorado Department of Local Affairs, *"The state saw the worst wildfire season in its history in 2002 with 3,072 wildfires burning over 600,000 acres - the most acreage in the nation following Alaska and Oregon. Three hundred-eighty houses and 624 outbuildings were lost. Insurance claims reached \$79.3 million and firefighting and emergency rehabilitation efforts exceeded \$200 million."*

Having the available resources and knowing how to access them is crucial for someone who is involved in a fire incident and is injured or in critical condition. The information provided will help to increase an understanding of OXY's policy and help in providing assistance to the general public and to OXY should unexpected conditions arise which create a concern for public safety.

All OXY employees, contractors, sub-contractors, or anyone on OXY-owned property should have the *Emergency Response Plan (ERP) Manual* available on hand for a resource in case of an emergency situation. The *Fire Prevention Plan* is in addition in the ERP Manual and specifically lays out a plan of action for workers to follow when an unexpected fire does happen.

This section cannot cover all potential situations that may require emergency procedures. Check with the local OXY representative for site specific procedures in effect for a particular work location.



EMERGENCY

Types of Fires

There are five general types of fires that have the possibility to occur on OXY operations. They are lightning, smoking, flaring, hot work, and vehicle fires all which can result in a serious wildland fire. Better understanding these types of hazards will only help you realize how to respond more efficiently if a wildfire occurs.

Lightning

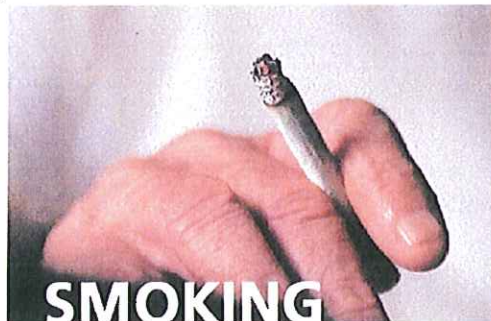
Lightning is one of the most beautiful displays in nature. It is also one of the most deadly natural phenomena known to man. With bolts that are hotter than the sun, lightning can do some serious

damage. One of the most common natural fires is caused by lightning. According to the Colorado Department of Local Affairs, "about half of all the wildfires in Colorado are lightning caused fires". Storms can move in very quickly on top of the mountain and lightning can become a severe hazard. In the United States alone, lightning sets 10,000 forest fires and causes \$100 million in property damage every year. Always stay inside during a lightning storm; never go outside. If you are caught outside during a lightning storm avoid trees, fences, poles, or anything metal.



Smoking

The second type of fire is smoking from lit cigarettes. Cigarette fires cause an estimated \$100,000 in the U.S. per year. The best way to prevent a fire from smoking is to smoke only in designated smoking areas or in your vehicle. Never throw a cigarette butt outside. This is one of the most common ways fires are started. Pay attention to posted "NO SMOKING" signs and never smoke near flammable liquids or gases.



Flaring

Another potential fire hazard is flaring on the drilling locations. Flaring or venting is a controlled burning process of natural gas that cannot be processed for sale or use because of technical reasons. OXY has long used flaring and venting to safely dispose of gases that occur in the production and processing of natural gas. The flare is always extended over the pit at a location, greatly reducing the chance for sparks to ignite a fire. In emergency situations, flaring provides a safe way to stabilize equipment. Flaring is always performed at well-site locations where there is no vegetation growth, decreasing the fire danger even more.

Hot Work

A fourth fire danger is hot work which includes welding, grinding, and cutting. Each one of these is extremely dangerous because of the high fire danger they present. Dry, hot temperatures provide the perfect environment for sparks to ignite and start a wildland fire. Every contractor who intends

to perform one of these operations for OXY must have a Hot Work Permit before they start their job. Each contractor must have an established person that is the "fire watch" while the hot work is being performed. This person stands ready with an approved fire extinguisher to put out any fires that may start. The fire watch is required to remain at the hot work area for a period of 30 minutes after the job is complete. This lessens the chance of a fire occurring.

Vehicle Hazards

Another fire concern is vehicles that are equipped with catalytic converters. Catalysts reduce emissions by accelerating the combustion of pollutants leaving the engine. In doing this job, they get hot. The outside metal temperatures of some types of converters may approach 800 to 1000 F under conditions of extremely high engine loading. In other words, catalytic converters on vehicles get extremely hot after a long drive up the mountain. So parking should be only in a designated parking area at the location. Never park a catalyst-equipped vehicle, or any vehicle, on a pile of dry grass/brush or other dry vegetation. Always park where you can easily access the nearest exit by driving forward. Survey the scene so you know your exits for means of a quick escape.

When a Fire Breaks Out:

If a potential wildfire breaks out on the mesa, the most important thing is accountability. That is one of the main reasons why OXY contracts the security guards. They have a daily log of every individual that accesses OXY property. First of all notify someone of the fire, whether it be your supervisor, coworker, etc. Second, call the DeBeque Fire Department immediately at **(970) 242-1234**; the sooner the fire department is dispatched, the quicker the response time will be. Then analyze the situation and determine what the potential hazards are.

Ask yourself these questions:

Are there any hazardous or toxic chemicals at risk?

Is the fire life threatening?

Is there damage to public property?

If possible and not a risk to life, isolate the fuel sources.

Next, determine if the fire can be extinguished, if so, alert someone else of your plans, locate the nearest fire extinguisher and proceed to put the fire out. Every employee of OXY should be trained on how to properly extinguish a fire.

Note: OXY recommends fighting a fire ONLY in the incipient stage. What is the incipient stage? A fire in its beginning stage. Incipient stage fires can be controlled with portable fire extinguishers.

There are (4) steps to extinguish a fire called the **PASS system**:

Pull - *Pull* the safety pin

Aim - Remove the hose and *aim* the nozzle toward the fire

Squeeze - Holding the handle, *squeeze* the trigger

Sweep - Extinguish the fire in a *sweeping* motion, from left to right



When to Leave

If the fire cannot be put out by the fire extinguisher in the *incipient stage*, it is time to evacuate the area immediately. Communication is key, inform everyone to evacuate the location and make sure everyone is accounted for. There should be designated meeting or muster points on location, where the entire crew/employees would meet in the event of an emergency. During the brief meeting, decide which route is the safest to use and evacuate as soon as possible. You should become familiar with the alternative evacuation routes on the mesa/valley.

There are (4) alternative routes of escape from OXY operations. The first three possible exits are drivable escape routes and the latter is a cow trail. The primary escape route is off the OXY road leading to Conn Creek Road. The second is off Logan Wash Road if possible. The third alternative is to drive north on Trail Ridge Road, which is the road that lays directly north of the mesa well locations. If you stay on Trail Ridge Road it will eventually take you north to Rio Blanco County on County Road 5 and then to Colorado Highway 13. The other possible route would be to hike down the cow path that is connected to OXY's valley operations. This allows (4) different evacuation routes where if one exit is blocked there is always an alternative. Please note the (3) secondary routes are **ONLY** for emergency access and are intended for the safe escape of OXY contractors/sub-contractors.

Where To Go

Once you have evacuated the area, the primary muster point for each individual would be the DeBeque baseball field, which is north of DeBeque on the west side of County Road 45. Everyone should meet there and be accounted for by the supervisor in charge. If your path of escape is Trail Ridge Road, continue until you reach Piceance Creek, Rio Blanca county roads. Travel east on Rio Blanco County Road 5 to Colorado Highway 13 and then south on Highway 13 to Rifle, CO and Interstate 70. Once you are in the safe zone contact your supervisor immediately for accountability. Drive careful and when emergency vehicles are met on the road, pull over and always give them the right away. **Report all fires, regardless of the size to an OXY representative as soon as possible.**

If a situation occurs where all exits are blocked, find a location with a bare, dirt pad and wait out the fire. Park your vehicle the farthest point away from all production units and methanol/condensate tanks and turn the engine off. Stay in your vehicle with the windows rolled up and the air conditioner/heater off, with all vents closed. This will keep smoke from entering the vehicle.

Who/What is in Danger?

There are several major operations that are in the danger zone if a fire breaks out. Drilling rigs, multiple production sites, various contractors on location, hunter/rancher cabins, and particularly temporary housing units are a major concern for OXY. Also, other oil/gas companies in the area travel daily on Logan Wash Road and could also be affected.

Temporary Housing Units

One of the most susceptible places for a wildland fire to catch employees off-guard is the temporary housing units. Remote locations provide an opportunity for a fire to easily arrive and trap employees with no access/egress to escape. To ensure the safety and health of occupants in the temporary housing units, inspections will have to be conducted on a monthly basis. The temporary housing units are being assessed per NFPA Life Safety Code, OSHA regulations, and Colorado state and county regulations to ensure the health and safety of each employee.

Fire Dangers/Hazards

The following is a list of things that should be considered for fire prevention:

- Temporary housing units must be a minimum of 75 feet from the well-head and condensate/methanol tanks.
- Smoking is allowed only in designated smoking areas. Smoking is **NOT ALLOWED** inside any temporary housing units owned or leased by OXY on OXY property. "No Smoking" signs shall be posted at fire hazard areas. Matches and all smoking equipment may not be carried into "No Smoking" areas. Butt disposal containers must be placed in the designated smoking areas.
- Absolutely no drugs, alcohol, or firearms. Methamphetamine laboratories are **EXTREMELY DANGEROUS** and will not be tolerated on OXY property.
- All exits must be maintained free and clear of any obstructions. Exits must have free clearance of 10 feet. EXIT signs must be posted at each exit in the facility. Center to center between trailers must be maintained at a minimum of 20 feet. Exit stairs must be sturdy and level.
- Areas around all temporary housing units shall be kept free of clutter and shall be monitored for trash and debris on a daily basis.

- All combustible waste materials must be disposed of daily. Bear-proof trash containers must be provided on the location.
- No gas heaters are allowed on location. Only electric heaters or unit heaters are acceptable means of heating.
- Absolutely no open-flame fires or charcoal grilling is allowed. Only gas cooking grills are allowable per written OXY approval, but must be 50 feet away from the well-head.
- Vegetation must be cleared within a 10 foot distance around the facility.
- Fully charged and mounted fire extinguishers shall be available and accessible to all residents. They must be monthly and annually inspected and be located 75 feet (maximum) from any point in the facility. Access should be unobstructed and personnel trained to use the extinguisher. Extinguishers must be clearly marked.
- Only non-flammable cleaning materials are allowed
- Flammable liquids shall not be stored within 50 feet of the well-head.
- All small gas/diesel containers must be stored at least 50 feet away from the temporary facility, placed within secondary containment, and the container must be an OSHA/NFPA approved safety can.
- All electrical wiring and appliances shall be UL rated and shall meet all applicable federal, state and local building codes, OSHA standards and NFPA regulations. All units must be grounded.
- Smoke alarms and leak detectors are required by NFPA Life Safety Code and will be inspected on a monthly basis.
- Each site shall have a pre-determined muster point and all occupants of the temporary housing site shall be briefed on emergency action plans.
- All temporary housing units located on OXY property will be monthly inspected and/or searched.

How To Prepare for a Fire?

Evacuation Drills/Training

Every drilling rig crew, temporary housing occupants, and contractor that is staying on the mesa for a set time frame is required to have routine evacuation drills and training. Supervisors should provide information concerning the (4) evacuation routes, existing fire hazards, and important safety concerns on a weekly basis. Fire drills need to be conducted to each hitch on a monthly basis. Employees need to know the Fire Prevention Plan, so when the unexpected does happen, they will be ready.

The OXY Management Team will distribute an *Emergency Response Plan (ERP) Manual* containing the Fire Prevention Plan to each critical contractor/employee before employment, with the expectation that the critical contractors/employees will brief individuals and visitors they oversee. The fire hazards will be discussed and any questions or concerns should be brought to attention immediately. It is important to know the potential hazards that exist during a job and the resources that your safety depends on.

Fire Prevention Checklist

To ensure that you know this fire plan, ask yourself these questions:

- ✓ What fire hazards exist around me?
- ✓ What are the (4) evacuation routes that are available?
- ✓ What is the best exit for a means of escape?
- ✓ Who do I call in case of a fire?
- ✓ Where do I access emergency contact information?
- ✓ Is the fire life threatening?
- ✓ Where is the closest fire extinguisher?
- ✓ Where is the muster points in case of an emergency?
- ✓ What is the weather like, windy, thunderstorms, etc.?

MSDS: Natural Gas Condensate

MATERIAL SAFETY DATA SHEET



Print date: 06-Dec-2005

Revision date: NA

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification: Occidental Oil and Gas Corporation
5 E. Greenway Plaza
Suite 110
Houston, TX 77046

Emergency Telephone Number: CHEMTREC: 1-800-424-9300

Product Code: OOGC011

Product Name: NATURAL GAS CONDENSATE

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: HIGHLY FLAMMABLE. Remove all ignition sources. CANCER HAZARD. Contains benzene. Harmful by inhalation, in contact with skin and if swallowed.

Color: Colorless.

Appearance: Clear liquid.

Odor: Hydrocarbon.

Major Health Hazards: May be absorbed through the skin in toxic amounts.

Physical Hazards: Keep away from all sources of ignition.

Other: Avoid contact with eyes, skin and clothing.

Potential Health Effects:

Inhalation: CNS effects. Dizziness. Headache. Irritation. Neuropathy.

Eye contact: Irritation.

Skin contact: Irritation. May be absorbed through the skin in toxic amounts.

Ingestion: Gastrointestinal irritation, nausea, vomiting and diarrhea. May cause burns of mouth and esophagus.

Chronic Overexposure: May cause dermatitis. Blood. Bone marrow (leukemia). CNS (Central Nervous System). Kidney damage. Liver damage. PNS (Peripheral Nervous System). Respiratory system. Cancer.

Carcinogen Status:

Components - Units	NTP	IARC 1	IARC 2	OSHA (SRC*)
Natural gas condensates, petroleum 64741-47-5 (0 - 100 %)	Not listed	Not listed	Not listed	
Hexane 110-54-3 (0 - 11 %)	Not listed	Not listed	Not listed	
Benzene 71-43-2 (0 - 10 %)	Known Carcinogen	Not listed	Not listed	0.5 ppm Cancer hazard, Flammable - see 29 CFR 1910.1028 1 ppm 5 ppm
Xylenes (o-, m-, p- isomers) 1330-20-7 (0 - 5 %)	Not listed	Not listed	Not listed	
Cyclohexane 110-82-7 (0 - 5 %)	Not listed	Not listed	Not listed	
Toluene 108-88-3 (0 - 5 %)	Not listed	Not listed	Not listed	
Ethyl benzene 100-41-4 (0 - 1 %)	Not listed	Not listed	Not listed	
Cumene 98-82-8 (0 - 0.05 %)	Not listed	Not listed	Not listed	
Heptane (n-) 142-82-5 (YES %)	Not listed	Not listed	Not listed	
Pentane 109-66-0 (YES %)	Not listed	Not listed	Not listed	
Nonane 111-84-2 (YES %)	Not listed	Not listed	Not listed	

*SRC = Specifically Regulated Chemical

Medical Conditions Aggravated by Exposure: Blood system disorders. Kidney disorders. Liver disorders. Nervous system disorders. Respiratory disorders. Skin disorders.

HMIS:

(Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health: 2* **Flammability:** 3 **Reactivity:** 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Components - Units	CAS-No	Concentration	ACGIH Full Shift TWA	OSHA Full Shift PEL	OSHA Full Shift PEL (Vacated)
Natural gas condensates, petroleum - PPH	64741-47-5	0 - 100			
Hexane - PPH	110-54-3	0 - 11	50 ppm 500 ppm other than n-hexane		180 mg/m ³ 1800 mg/m ³ 50 ppm 500 ppm
Benzene - PPH	71-43-2	0 - 10	0.5 ppm		10 ppm unless specified in 1910.1028
Xylenes (o-, m-, p- isomers) - PPH	1330-20-7	0 - 5	100 ppm		100 ppm
Cyclohexane - PPH	110-82-7	0 - 5	100 ppm		435 mg/m ³ 1050 mg/m ³
Toluene - PPH	108-88-3	0 - 5	50 ppm		300 ppm 100 ppm
Ethyl benzene - PPH	100-41-4	0 - 1	100 ppm		375 mg/m ³ 100 ppm
Cumene - PPH	98-82-8	0 - 0.05	50 ppm		435 mg/m ³ 245 mg/m ³
Heptane (n-) -	142-82-5	YES	400 ppm		50 ppm 1600 mg/m ³
Pentane -	109-66-0	YES	600 ppm		400 ppm 1800 mg/m ³
Nonane -	111-84-2	YES	200 ppm		600 ppm 1050 mg/m ³ 200 ppm

* PPH=Percent (%)

4. FIRST AID MEASURES

General Advice:	Move to fresh air. Never give anything by mouth to an unconscious or convulsive person.
Inhalation:	If respiration or pulse has stopped, have a trained person administer basic life support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.
Skin Contact:	Rinse with plenty of water. If symptoms persist, seek medical attention.
Eye Contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Ingestion:	If symptoms persist, seek medical attention. Aspiration may cause pulmonary edema and pneumonitis.

5. FIRE-FIGHTING MEASURES

Flash point:	22.8 C (73 F)	Method:	NA
Extinguishing Media:	Dry chemical. Carbon dioxide (CO2). Water fog.		
Extinguishing Media NOT to be Used for Safety Reasons:	None known.		
Hazardous Combustion Products:	Carbon monoxide. Non-combusted hydrocarbons (smoke).		

Specific Hazards: Highly flammable. Class 1C liquid. Readily ignited by heat, sparks or flames. In case of fire, allow gas to burn if flow cannot be shut off immediately. Permit residual vaporized liquid to dissipate. Use water fog in flooding quantities. Apply media from as far a distance as possible. Cool containers and surrounding area with water.

IDLH: Benzene - 500 ppm
Carbon monoxide - 1200 ppm

Special Protective Equipment for Firefighters: In the event of fire, wear self-contained breathing apparatus.

Flammability Limits in Air:

Lower	No information available	Upper	No information available
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NFPA:

Health:	1	Flammability:	3	Reactivity/Instability:	0
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Sensitivity to Static Discharge: Yes

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Eliminate all sources of ignition. Take precautionary measures against static discharges. Wear personal protective equipment as per Section 8.

Environmental Precautions: Stop leak if possible without personal risk. Do not allow material to contaminate ground water system. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. Releases should be reported, if required, to appropriate agencies. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (US. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Methods for Cleaning Up: Reuse or reprocess where possible. Take up with sand or other oil absorbent materials. Carefully shovel, scoop or sweep up into waste containers for reclamation or disposal. Flammable vapors may accumulate in closed containers.

Other Precautions: Keep all sources of ignition away from spill/release. Prevent contact with ignition sources or areas/equipment that require protection. The proper use of water spray may effectively disperse product vapors or the liquid itself.

7. HANDLING AND STORAGE

General: Electrical installations and equipment in hazardous locations should be installed according to the National Electric Code (U.S.A.). Empty containers retain residue and may be hazardous. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Handling Procedures: Avoid contact with skin and eyes. Remove and wash contaminated clothing before re-use. Keep contaminated clothing away from sources of ignition. To avoid ignition by static electricity discharge, equipment must be bonded and grounded. The use of explosion-proof equipment may be required by local fire codes.

Storage Conditions: Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat and sources of ignition. May be subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Store only in approved containers. Keep away from incompatible materials.

Incompatible Substances: Oxidizing materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Ensure compliance with applicable exposure limits (Section 2). Ensure adequate ventilation, especially in confined areas.. Use explosion proof equipment and lighting in classified/controlled areas. Where possible, enclose operations. Use local exhaust ventilation at the site of chemical release.

Personal Protective Equipment:

Eye Protection: Safety glasses with side-shields. Where splashing or spraying is possible, use chemical protective goggles.

Skin and Body Protection: Flame retardant protective clothing.

Hand Protection: Chemical protective gloves.

Protective Material Types: Nitrile. Tychem(R) BR/LV. Tychem(R) TK. Viton(R). Viton(R)/Butyl rubber.

Respiratory Protection: When exposure limits may be exceeded, wear respiratory equipment as per U.S. OSHA 29 CFR 1910.134. Organic vapor cartridges may be appropriate under certain conditions. A full facepiece air-purifying respirator may be used in concentrations up to 50X the acceptable exposure level. Positive pressure supplied air must be used when there is a potential for uncontrolled release. When the level may be above the IDLH, use an SCBA or positive pressure supplied air with an auxilliary self-contained escape pack.

Other Protective Equipment: Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Hygiene Measures: Do not smoke. Launder contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Appearance: Clear liquid. **Color:** Colorless. **Odor:** Hydrocarbon.

Boiling Point/Range:	No data available	Melting Point/Range:	No data available	Freezing Point/Range:	No data available
Vapor Density: (air=1)	Not determined	Bulk Density:	No data available	Density:	No data available

Vapor Pressure: 575.8 mm Hg @ 38 C
Specific Gravity (water=1): 0.7 - 0.74

Water Solubility: Slightly soluble
Partition Coefficient (n-octanol/water): No data available
Evaporation Rate (nBuAc=1): No data available

10. STABILITY AND REACTIVITY

Stability:	Stable.
Conditions to Avoid:	Keep away from open flames, hot surfaces and sources of ignition.
Incompatibilities/ Materials to Avoid:	Strong oxidizing agents. Chlorine.
Hazardous Decomposition Products:	Carbon monoxide. Carbon dioxide. Sulfur oxides. Hydrogen sulfide. Non-combusted hydrocarbons (smoke).
Hazardous Polymerization:	Will not occur
Reactivity:	Stable at normal temperatures and pressure.

11. TOXICOLOGICAL INFORMATION

Target Organs:	Central nervous system. Eyes. Hematopoietic (blood) system. Kidneys. Liver. Peripheral nervous system. Reproductive system. Respiratory system. Skin.
Acute Toxicity:	Irritation. Anesthesia. Neuropathy. Nausea. Vomiting. Chemical pneumonitis (aspiration hazard). Alcohol may enhance the toxic effects.
Primary Irritation:	
Eye Irritation:	Moderate.
Skin Irritation:	May cause skin irritation and/or dermatitis.
Inhalation:	Irritating to respiratory system. CNS depression.
Toxicity Testing:	No data are available on the product itself

Components - Units	LC50/Inhalation /4h/Rat:	LC50/Inhalation /8h/Rat:	LD50/Dermal /Rabbit:	LD50/Oral /Rat:
Natural gas condensates, petroleum 64741-47-5 (0 - 100 %)		5.2 mg/L Rat 4h		
Hexane 110-54-3 (0 - 11 %)		48000 ppm Rat 4h		
Benzene 71-43-2 (0 - 10 %)		13050 ppm Rat 4h		
Xylenes (o-, m-, p- isomers) 1330-20-7 (0 - 5 %)		5000 ppm Rat 4h		
Cyclohexane 110-82-7 (0 - 5 %)		13.9 mg/L Rat 4h		
Toluene 108-88-3 (0 - 5 %)		12.5 mg/L Rat 4h 26700 ppm Rat 1h		
Ethyl benzene 100-41-4 (0 - 1 %)		17.2 mg/L Rat 4h		
Heptane (n-) 142-82-5 (YES %)		103 g/m ³ Rat 4h		
Pentane 109-66-0 (YES %)		364 g/m ³ Rat 4h		
Nonane 111-84-2 (YES %)		3200 ppm Rat 4h		

Reproductive Toxicity: No data are available on the product itself
Components - Units
Reproductive Toxins
Benzene
71-43-2 (0 - 10 %) male reproductive toxicity, initial date 12/26/97

Chronic Toxicity: Prolonged skin contact may defat the skin and produce dermatitis. Cancer.
Reproductive toxin .

Carcinogenic Effects: See Section 2 of this MSDS for carcinogenicity of components..

12. ECOLOGICAL INFORMATION

Product Information: No data are available on the product itself.
Ecotoxicity Data:

Fish Species Data: Benzene: Fathead minnow 12.6 mg/L, 96 Hrs
Hexanes: Goldfish 150-210 mg/L, 48 Hrs

Fate and Transport:

Biodegradation: Inherently biodegradable. Volatization from soil surfaces is an important environmental fate process. n-Hexane at 500 mg/liter was toxic to microorganisms using 50 mg municipal sludge. The products of degradation are less toxic than the product itself. These products are carbon monoxide, carbon dioxide, water and sulfur oxides.

Aquatic Toxicity: Volatization from water surfaces is expected.

Additional Ecological Information: Will exist in the vapor-phase in the ambient atmosphere.

13. DISPOSAL CONSIDERATIONS

**Waste from Residues/
Unused Product:**

Reuse or reprocess, if possible. May be hazardous under U.S. EPA RCRA regulations. Dispose in accordance with all applicable regulations. Contact your local environmental agency for specific rules. Return unused product in original container to supplier. Contact supplier if guidance is required.

Contaminated Packaging:

Containers should be disposed of in an environmentally safe manner. Containers should be emptied prior to discard. Container rinsate must be disposed of in compliance with applicable regulations. Inspect empty containers before reuse. May contain product residues which could produce flammable vapors.

14. TRANSPORT INFORMATION

Proper Shipping Name: HYDROCARBONS, LIQUID, N.O.S.
UN/Id No: 3295
Hazard Class or Division: 3
Packing Group: I
Labeling Requirements: Required
Dot Label: Flammable liquid

15. REGULATORY INFORMATION

U.S. Regulations:

SARA Title III Sections 311/312: **SARA Hazard Categories:** Acute Health Hazard. Chronic Health Hazard. Fire Hazard.

Components - Units Natural gas condensates, petroleum
64741-47-5 (0 - 100 %)

SARA Title III Section 302 Extremely Hazardous Substance: No

SARA Title III Section 313 Threshold (pounds): NA

CERCLA/SARA - Hazardous Substances and their Reportable Quantities: NA

Components - Units Hexane
110-54-3 (0 - 11 %)

SARA Title III Section 302 Extremely Hazardous Substance: No

SARA Title III Section 313 Threshold (pounds): 1.0

CERCLA/SARA - Hazardous Substances and their Reportable Quantities: 5000

Components - Units Benzene
71-43-2 (0 - 10 %)

SARA Title III Section 302 Extremely Hazardous Substance: No

SARA Title III Section 313 Threshold (pounds): 0.1

CERCLA/SARA - Hazardous Substances and their Reportable Quantities: 10

Components - Units	Xylenes (o-, m-, p- isomers) 1330-20-7 (0 - 5 %)	
	SARA Title III Section 302 Extremely Hazardous Substance:	No
	SARA Title III Section 313 Threshold (pounds):	1.0
	CERCLA/SARA - Hazardous Substances and their Reportable Quantities:	100
Components - Units	Cyclohexane 110-82-7 (0 - 5 %)	
	SARA Title III Section 302 Extremely Hazardous Substance:	No
	SARA Title III Section 313 Threshold (pounds):	1.0
	CERCLA/SARA - Hazardous Substances and their Reportable Quantities:	1000
Components - Units	Toluene 108-88-3 (0 - 5 %)	
	SARA Title III Section 302 Extremely Hazardous Substance:	No
	SARA Title III Section 313 Threshold (pounds):	1.0
	CERCLA/SARA - Hazardous Substances and their Reportable Quantities:	1 1000
Components - Units	Ethyl benzene 100-41-4 (0 - 1 %)	
	SARA Title III Section 302 Extremely Hazardous Substance:	No
	SARA Title III Section 313 Threshold (pounds):	0.1
	CERCLA/SARA - Hazardous Substances and their Reportable Quantities:	1000
Components - Units	Cumene 98-82-8 (0 - 0.05 %)	
	SARA Title III Section 302 Extremely Hazardous Substance:	No
	SARA Title III Section 313 Threshold (pounds):	1.0
	CERCLA/SARA - Hazardous Substances and their Reportable Quantities:	5000
Components - Units	Heptane (n-) 142-82-5 (YES %)	
	SARA Title III Section 302 Extremely Hazardous Substance:	No
	SARA Title III Section 313 Threshold (pounds):	NA
	CERCLA/SARA - Hazardous Substances and their Reportable Quantities:	NA
Components - Units	Pentane 109-66-0 (YES %)	
	SARA Title III Section 302 Extremely Hazardous Substance:	No
	SARA Title III Section 313 Threshold (pounds):	NA
	CERCLA/SARA - Hazardous Substances and their Reportable Quantities:	NA
Components - Units	Nonane 111-84-2 (YES %)	
	SARA Title III Section 302 Extremely Hazardous Substance:	No
	SARA Title III Section 313 Threshold (pounds):	NA
	CERCLA/SARA - Hazardous Substances and their Reportable Quantities:	NA

National Inventory Status:

TSCA:	All components are either listed under TSCA or are exempt.	
Components - Units	TSCA 12(b):	TSCA IUR
Natural gas condensates, petroleum 64741-47-5 (0 - 100 %)		Partially exempt chemical substance termed 'Petroleum Process Stream'

State Regulations:

Components - Units	Benzene 71-43-2 (0 - 10 %)
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California Proposition 65: **WARNING:**
This product contains a chemical known to the
State of California to cause cancer and/or birth
defects or other reproductive harm.

carcinogen, initial date 2/27/87
developmental toxicity, initial date 12/26/97

Components - Units Toluene
 108-88-3 (0 - 5 %)

California Proposition 65: **WARNING:**
This product contains a chemical known to the
State of California to cause cancer and/or birth
defects or other reproductive harm.

developmental toxicity, initial date 1/1/91

Components - Units Ethyl benzene
 100-41-4 (0 - 1 %)

California Proposition 65: **WARNING:**
This product contains a chemical known to the
State of California to cause cancer and/or birth
defects or other reproductive harm.

carcinogen, initial date 6/11/04

16. OTHER INFORMATION

Technical Information: 1-713-215-7353

Reason for Revision: Not applicable

Additional Advice: Before using any product, read all warnings and directions on the label.

IMPORTANT:

The information provided in this safety data sheet is accurate to the best of our knowledge, or is obtained from sources believed to be accurate at the time of its publication. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SUITABILITY, STABILITY OR OTHERWISE. The information included herein is not intended to be all-inclusive as to the appropriate manner and/or conditions of use, handling and/or storage. Factors pertaining to certain conditions of storage, handling, or use of this product may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended to, and nothing herein shall be construed as a recommendation to, infringe any existing patents or violate any laws, regulations or ordinances of any governmental entity.

Common Short Forms:

CAS:	Chemical Abstract Service
COC:	Cleveland Open Cup
g/L:	grams per Liter
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IDLH:	Immediately Dangerous to Life or Health
LEL:	Lower Explosive Limit
lbs/gal:	pounds per gallon
NA:	Not Applicable
NFPA:	National Fire Protection Association
ND:	Not Determined
NTP:	National Toxicology Program
PPE:	Personal Protective Equipment
ppm:	Parts per Million
RQ:	Reportable Quantity
TCC:	Tag Closed Cup
UEL:	Upper Explosive Limit

MSDS: Dry Natural Gas

MATERIAL SAFETY DATA SHEET



Print date: 20-May-2005

Revision date: NA

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification: Occidental Oil and Gas Corporation
5 E. Greenway Plaza
Suite 110
Houston, TX 77046

Emergency Telephone Number: CHEMTREC: 1-800-424-9300

Product Code: OOGC009

Product Name: DRY NATURAL GAS

Synonym(s): Residue gas, Compressed or liquefied gas

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:	HIGHLY FLAMMABLE.
Color:	Colorless.
Appearance:	Liquefied compressed gas.
Odor:	Odorless.
Physical Hazards:	Keep away from all sources of ignition. Contact with gas or liquefied gas may cause burns and/or frostbite.

Potential Health Effects:

Inhalation: Blurred vision. Cardiac sensitization. CNS depression. Confusion. Drowsiness. Headache. Nausea. Weakness.

Eye contact: Conjunctivitis. Direct contact with liquid may cause freeze burns. Irritation.

Skin contact: Direct contact with liquid may cause freeze burns. May cause irritation if moisture on skin.

Ingestion: Not a likely route of exposure.

Chronic Overexposure: Cardiac sensitization.

Carcinogen Status:

Components - Units	NTP	IARC 1	IARC 2	OSHA (SRC*)
Methane 74-82-8 (>90 %)	Not listed	Not listed	Not listed	
Ethane 74-84-0 (<5 %)	Not listed	Not listed	Not listed	

*SRC = Specifically Regulated Chemical

Medical Conditions Aggravated by Exposure: Conditions of the heart.

HMIS:

(Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health: 2**Flammability:** 4**Reactivity:** 0**3. COMPOSITION/INFORMATION ON INGREDIENTS****Ingredients:**

Components - Units	CAS-No	Concentration	ACGIH Full Shift TWA	OSHA Full Shift PEL	OSHA Full Shift PEL (Vacated)
Methane - PPH	74-82-8	>90	1000 ppm listed under aliphatic hydrocarbon gases alkane C1-C4		
Ethane - PPH	74-84-0	<5	1000 ppm listed under aliphatic hydrocarbon gases alkane C1-C4		

* PPH=Percent (%)

4. FIRST AID MEASURES

General Advice:	Move to fresh air.
Inhalation:	If respiration or pulse has stopped, have a trained person administer basic life support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.
Skin Contact:	Frostbite - warm injured area in very warm water.
Eye Contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Ingestion:	Never give anything by mouth to an unconscious or convulsive person.
Notes to Physician:	Treat frost-bitten areas as needed.

5. FIRE-FIGHTING MEASURES

Flash point:	NA	Method:	NA
Extinguishing Media:	Dry chemical. Carbon dioxide (CO2).		
Extinguishing Media NOT to be Used for Safety Reasons:	None known		
Hazardous Combustion Products:	Carbon monoxide.		
Specific Hazards:	Flammable. Readily ignited by heat, sparks or flames. Keep product and empty containers away from heat and sources of ignition. Containers may explode when heated. In case of fire, allow gas to burn if flow cannot be shut off immediately.		
Unusual Hazards:	Forms explosive mixtures with air.		
IDLH:	NA		
Special Protective Equipment for Firefighters:	Wear self contained breathing apparatus for fire fighting if necessary.		
Autoignition Temperature:	~540 C (~1004 F)		

Flammability Limits in Air:

Lower ~5.0%

Upper ~15.0%

NFPA:

Health: 1

Flammability: 4

Reactivity/Instability: 0

Sensitivity to Static Discharge: Yes

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use spark-proof tools and explosion-proof equipment. Avoid contact with skin and eyes.
Environmental Precautions:	Stop leak if possible without personal risk. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (US. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800) 424-8802 or (202) 426-2675.
Methods for Cleaning Up:	Wear personal protective equipment as per Section 8. For small spill, permit escaped gas to dissipate with caution. Stop flow of gas from remote area. For large spill, consider evacuation for downwind areas.
Other Precautions:	Keep all sources of ignition away from spill/release.

7. HANDLING AND STORAGE

General:	Empty containers retain residue and may be hazardous. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. Electrical installations and equipment in hazardous locations should be installed according to the National Electric Code (U.S.A.).
Handling Procedures:	To avoid ignition by static electricity discharge, equipment must be bonded and grounded. Avoid contact with skin and eyes. Do not enter confined spaces such as tanks or pits without following proper entry procedures.
Storage Conditions:	Keep tightly closed. No smoking in storage and work areas. Store only in approved containers. Keep in a dry, cool and well-ventilated place. Keep away from direct sunlight. Keep product and empty container away from heat and sources of ignition.
Incompatible Substances:	Oxidizing materials.
Additional Information:	Outdoor or detached storage is preferred

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:	Ensure adequate ventilation, especially in confined areas. Ensure compliance with applicable exposure limits (Section 2). Use explosion proof equipment and lighting in classified/controlled areas.
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Personal Protective Equipment:

Eye Protection: Chemical protective goggles when handling pressurized material.

Skin and Body Protection: No additional equipment required.

Hand Protection: Heavy gloves when working with sour liquid.

Protective Material Types: Leather. Thermal/insulating (e.g., Kevlar).

Respiratory Protection: When exposure limits may be exceeded, wear respiratory equipment as per U.S. OSHA 29 CFR 1910.134. Positive pressure supplied air must be used when the level is expected to be above the acceptable exposure level, or when there is a potential for uncontrolled release. For rescue and maintenance work in storage tanks, use self-contained breathing apparatus.

Other Protective Equipment: An emergency eye wash fountain and quick drench shower may be provided in the immediate work area.

Hygiene Measures: Do not smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Gas.

Appearance: Liquefied compressed gas.

Color: Colorless.

Odor: Odorless.

Boiling Point/Range: -250 C to -160 C

Melting Point/Range: No data available

Freezing Point/Range: No data available

Vapor Density: <1
(air=1)

Bulk Density: No data available

Density: No data available

Vapor Pressure: No data available

Water Solubility: Slight
Partition Coefficient (n-octanol/water): No data available

Evaporation Rate (nBuAc=1): N/A (Gas)
Volatility: 100%

10. STABILITY AND REACTIVITY

Stability: Stable
Conditions to Avoid: Heat, flames and sparks.
Incompatibilities/ Strong oxidizing agents.
Materials to Avoid:
Hazardous Decomposition Products: Carbon monoxide. Carbon dioxide.
Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

Target Organs: Central nervous system. Heart.

Acute Toxicity: See Section 2 of this MSDS for acute symptoms of overexposure.

Primary Irritation:	
Eye Irritation:	Irritating to eyes.
Skin Irritation:	May cause irritation if moisture on skin.
Inhalation:	Cardiac sensitization. CNS depression.
Toxicity Testing:	No data are available on the product itself
Reproductive Toxicity:	No data are available on the product itself
Chronic Toxicity:	Cardiac sensitization.
Carcinogenic Effects:	See Section 2 of this MSDS for carcinogenicity of components.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data:

Fate and Transport:

Biodegradation:

Gas-phase methane will be very slowly degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be about 6 years. The biodegradation half life of methane was estimated to range from 70 days to infinity based on gas exchange biodegradation experiments conducted in model estuarine ecosystems.

Bioconcentration:

An estimated BCF of 1 suggests the potential for bioconcentration in aquatic organisms is low.

Aquatic Toxicity:

Hydrolysis is not expected to be an important environmental fate process since methane lacks functional groups that hydrolyze under environmental conditions.

Additional Ecological Information:

If released to soil, methane is expected to volatilize from soil (both moist and dry) based upon its vapor pressure and an estimated Henry's Law constant of 0.66 atm-cu m/mole.

13. DISPOSAL CONSIDERATIONS

Waste from Residues/ Unused Product:

Dispose in accordance with all applicable regulations. May be hazardous under U.S. EPA RCRA regulations. Contact your local environmental agency for specific rules. Reuse or reprocess, if possible. Contact supplier if guidance is required. Do not burn, or use a cutting torch, on empty container.

Contaminated Packaging:

Container rinsate must be disposed of in compliance with applicable regulations. Inspect empty containers before reuse. May contain product residues which could produce flammable vapors.

14. TRANSPORT INFORMATION

Proper Shipping Name:	NATURAL GAS, COMPRESSED
UN/Id No:	1971
Hazard Class or Division:	2.1
Packing Group:	NA
Labeling Requirements:	Required
Dot Label:	Flammable gas

15. REGULATORY INFORMATION

U.S. Regulations:

SARA Title III Sections 311/312: SARA Hazard Categories: Acute Health Hazard, Fire Hazard.

Components - Units

Methane
74-82-8 (>90 %)

SARA Title III Section 302 Extremely Hazardous Substance: No

SARA Title III Section 313 Threshold (pounds): NA

CERCLA/SARA - Hazardous Substances and their Reportable Quantities: NA

Components - Units

Ethane
74-84-0 (<5 %)

SARA Title III Section 302 Extremely Hazardous Substance: No

SARA Title III Section 313 Threshold (pounds): NA

CERCLA/SARA - Hazardous Substances and their Reportable Quantities: NA

National Inventory Status:

TSCA: All components are either listed under TSCA or are exempt.

State Regulations:

16. OTHER INFORMATION

Technical Information: 1-713-215-7353

Reason for Revision: Not applicable

Additional Advice: Before using any product, read all warnings and directions on the label.

IMPORTANT:

The information provided in this safety data sheet is accurate to the best of our knowledge, or is obtained from sources believed to be accurate at the time of its publication. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SUITABILITY, STABILITY OR OTHERWISE. The information included herein is not intended to be all-inclusive as to the appropriate manner and/or conditions of use, handling and/or storage. Factors pertaining to certain conditions of storage, handling, or use of this product may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended to, and nothing herein shall be construed as a recommendation to, infringe any existing patents or violate any laws, regulations or ordinances of any governmental entity.

Common Short Forms:

CAS: Chemical Abstract Service
COC: Cleveland Open Cup
g/L: grams per Liter
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
Group 1 – Causes cancer in humans
Group 2A – Probably causes cancer in humans
Group 2B – Possibly causes cancer in humans
IDLH: Immediately Dangerous to Life or Health
LEL: Lower Explosive Limit
lbs/gal: pounds per gallon
NA: Not Applicable
NFPA: National Fire Protection Association
ND: Not Determined
NTP: National Toxicology Program
PPE: Personal Protective Equipment
ppm: Parts per Million
RQ: Reportable Quantity
TCC: Tag Closed Cup
UEL: Upper Explosive Limit

MSDS: NGL Mix

MATERIAL SAFETY DATA SHEET



Print date: 19-May-2005

Revision date: NA

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification: Occidental Oil and Gas Corporation
5 E. Greenway Plaza
Suite 110
Houston, TX 77046

Emergency Telephone Number: CHEMTREC: 1-800-424-9300

Product Code: OOGC004

Product Name: NGL MIX

Synonym(s): Raw product, Raw make, Natural gas liquids

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: HIGHLY FLAMMABLE. Remove all ignition sources. Harmful by inhalation, in contact with skin and if swallowed.

Color: Colorless. Yellow.

Appearance: Liquefied compressed gas. Clear.

Odor: Slight petroleum.

Physical Hazards: Contact with gas or liquefied gas may cause burns and/or frostbite.

Other: NORM - Naturally Occurring Radioactive Material (see Section 7).

Potential Health Effects:

Inhalation: CNS depression. Coma. Convulsions. Cyanosis. Dizziness. Drowsiness. Euphoria. Headache. Irritation. Neuropathy. Pulmonary edema.

Eye contact: Direct contact with liquid or solid (compressed gas) causes cold burns/frost bite.

Skin contact: Direct contact with liquid or solid (compressed gas) causes cold burns/frost bite. May be absorbed through the skin in toxic amounts.

Ingestion: Not a likely route of exposure.

Chronic Overexposure: Chronic exposure to hexane damages the central nervous system.

Carcinogen Status:

Components - Units	NTP	IARC 1	IARC 2	OSHA (SRC*)
Natural gas, petroleum, raw liquid mix 64741-48-6 (>99 %)	Not listed	Not listed	Not listed	
Hexane 110-54-3 (<1 %)	Not listed	Not listed	Not listed	

*SRC = Specifically Regulated Chemical

Medical Conditions Aggravated by Exposure: No information available

HMIS:

(Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health: 1* Flammability: 4 Reactivity: 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Components - Units	CAS-No	Concentration	ACGIH Full Shift TWA	OSHA Full Shift PEL	OSHA Full Shift PEL (Vacated)
Natural gas, petroleum, raw liquid mix - PPH	64741-48-6	>99			
Hexane - PPH	110-54-3	<1	50 ppm 500 ppm		180 mg/m ³ 1800 mg/m ³ 50 ppm 500 ppm

* PPH=Percent (%)

4. FIRST AID MEASURES

General Advice:	Move to fresh air. Never give anything by mouth to an unconscious or convulsive person.
Inhalation:	If respiration or pulse has stopped, have a trained person administer basic life support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.
Skin Contact:	Frostbite - warm injured area in very warm water. If irritation or adverse symptoms develop, seek medical attention.
Eye Contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. GET MEDICAL ATTENTION IMMEDIATELY.
Ingestion:	Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. GET MEDICAL ATTENTION IMMEDIATELY. Aspiration may cause pulmonary edema and pneumonitis.
Notes to Physician:	Treat frost-bitten areas as needed.

5. FIRE-FIGHTING MEASURES

Flash point: <-40 F(<-40 C) **Method:** Estimated

Extinguishing Media: Dry chemical. Carbon dioxide (CO2). Water fog. Foam.
Extinguishing Media NOT to be Used for Safety Reasons: Water may be ineffective.

Hazardous Combustion Products: Toxic sulfur dioxide gas. Carbon monoxide. Hydrogen sulfide. Non-combusted hydrocarbons (smoke).

Specific Hazards: Highly flammable. Readily ignited by heat, sparks or flames. In case of fire, allow gas to burn if flow cannot be shut off immediately.

Unusual Hazards: Forms explosive mixtures with air.

IDLH: Carbon monoxide - 1200 ppm
Hydrogen sulfide - 100 ppm
Sulfur dioxide - 100 ppm

Special Protective Equipment for Firefighters: In the event of fire, wear self-contained breathing apparatus.

Autoignition Temperature: >204 C (>400 F)

Flammability Limits in Air:

Lower	1.5 %	Upper	12.5 %
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NFPA:

Health:	1	Flammability:	4	Reactivity/Instability:	0
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Sensitivity to Static Discharge: Yes

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Eliminate all sources of ignition. Take precautionary measures against static discharges. Wear personal protective equipment as per Section 8. Evacuate unnecessary personnel to safe areas.

Environmental Precautions: Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. If possible, turn leaking containers so that gas escapes rather than liquid. Releases should be reported, if required, to appropriate agencies. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (US. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Methods for Cleaning Up: Take up with sand or other oil absorbent materials. Carefully shovel, scoop or sweep up into waste containers for reclamation or disposal. Flammable vapors may accumulate in closed containers.

Other Precautions: Fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself. Prevent contact with ignition sources or areas/equipment that require protection.

7. HANDLING AND STORAGE

- General:** Electrical installations and equipment in hazardous locations should be installed according to the National Electric Code (U.S.A.). Empty containers retain residue and may be hazardous. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.
- Handling Procedures:** Avoid contact with skin and eyes. Remove and wash contaminated clothing before re-use. Keep contaminated clothing away from sources of ignition. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. The use of explosion-proof equipment may be required by local fire codes.
- Storage Conditions:** Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat and sources of ignition. May be subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Store only in approved containers. Keep away from incompatible materials.
- Incompatible Substances:** Oxidizing materials.

Additional Information:

Although Radon-222 levels which may be in the product represented by this MSDS do not present any direct Radon exposure hazard, customers should be aware of the potential for Radon daughter buildup within their processing systems. Radon-222 is a naturally occurring radioactive gas which can be a contaminant in natural gas. During processing, Radon tends to concentrate in liquefied petroleum gas streams and in product streams having a similar boiling point range. Industry experience has shown that this product may contain small amounts of Radon-222 and its radioactive "daughters." The actual concentration of Radon-222 and radioactive daughters in the delivered product is dependent on the geographical source of the natural gas and storage time prior to delivery. Process equipment, such as lines, filters, pumps and reaction units, may accumulate radioactive daughters and emit gamma radiation during operation. A potential external radiation hazard exists at or near any pipe, valve, or vessel containing a Radon-enriched stream, or containing internal deposits of radioactive material due to the transmission of gamma radiation through its wall. Field studies reported in the literature and conducted by company personnel at selected sites have not shown any conditions that subject workers to cumulative exposures in excess of general population limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha-emitting decay products which may be a hazard if inhaled or ingested. Before maintenance operations that require the opening of contaminated process equipment begin, the flow of gas should be stopped for four hours to allow the gamma radiation to drop to background levels. Protective equipment such as coveralls, gloves and respirators (NIOSH approved for particulates and radionuclides, or supplied-air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion, or inhalation of any residues containing alpha radiation. Airborne contamination may be minimized by handling scale and/or contaminated materials in a wet state.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering Controls:** Ensure compliance with applicable exposure limits (Section 2). Ensure adequate ventilation, especially in confined areas. Use explosion proof equipment and lighting in classified/controlled areas. Where possible, enclose operations. Use local exhaust ventilation at the site of chemical release.
- Personal Protective Equipment:**
- Eye Protection:** Where splashing or spraying is possible, use chemical protective goggles.
- Skin and Body Protection:** Flame retardant protective clothing.

Hand Protection: Nitrile rubber gloves. Insulated gloves suitable for low temperatures.

Protective Material Types: Nitrile. Tychem(R) BR/LV. Tychem(R) TK. Viton(R). Viton(R)/Butyl rubber.

Respiratory Protection: When exposure limits may be exceeded, wear respiratory equipment as per U.S. OSHA 29 CFR 1910.134. Organic vapor cartridges may be appropriate under certain conditions. A full facepiece air-purifying respirator may be used in concentrations up to 50X the acceptable exposure level. Positive pressure supplied air must be used when there is a potential for uncontrolled release. When the level may be above the IDLH, use an SCBA or positive pressure supplied air with an auxiliary self-contained escape pack.

Other Protective Equipment: An emergency eye wash fountain and quick drench shower may be provided in the immediate work area.

Hygiene Measures: Avoid contact with skin, eyes and clothing..

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Appearance:	Liquefied compressed gas. Clear.	Color:	Colorless. Yellow.	Odor:	Slight petroleum.
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Boiling Point/Range:	-127 to 31 F -88 to -10 C	Melting Point/Range:	-310 to -216 F -190 to -138 C	Freezing Point/Range:	No data available
Vapor Density: (air=1)	<1	Bulk Density:	No data available	Density:	No data available

Vapor Pressure: >52 psia @ 100 F (37.8 C)
>357 kPa

Specific Gravity (water=1): 0.356-0.584

Water Solubility: Insoluble
Partition Coefficient
(n-octanol/water): No data available

Evaporation Rate (nBuAc=1): <1
VOC Content (%): 80

10. STABILITY AND REACTIVITY

Stability:	Stable.
Conditions to Avoid:	Keep away from open flames, hot surfaces and sources of ignition. Direct sunlight.
Incompatibilities/	Chlorine. Dichromates. Halogenated compounds. Permanganates. Strong oxidizing
Materials to Avoid:	agents.
Hazardous Decomposition	Carbon monoxide. Nitrogen oxides (NOx). Sulfur oxides. Hydrogen sulfide. Non-
Products:	combusted hydrocarbons (smoke).
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Target Organs:	Central nervous system. Peripheral nervous system. Respiratory system.			
Acute Toxicity:	Burns similar to frostbite. Chemical pneumonitis (aspiration hazard). CNS depression. Dizziness. Euphoria. Headache. Lassitude (weakness, exhaustion).			
Primary Irritation:				
Eye Irritation:	Frostbite.			
Skin Irritation:	Frostbite.			
Inhalation:	CNS depression. Convulsions at high concentrations. Irritating to respiratory system. Pulmonary edema.			
Toxicity Testing:				
Components - Units	LC50/Inhalation /4h/Rat:	LC50/Inhalation /8h/Rat:	LD50/Dermal /Rabbit:	LD50/Oral /Rat:
Hexane 110-54-3 (<1 %)		48000 ppm Rat 4h		
Reproductive Toxicity:	No data is available on the product itself.			
Chronic Toxicity:	Chronic exposure to hexane damages the central nervous system..			
Carcinogenic Effects:	See Section 2 of this MSDS for carcinogenicity of components.			

12. ECOLOGICAL INFORMATION

Product Information:	Ecological testing has not been conducted on this product by the manufacturer.
Ecotoxicity Data:	
Fate and Transport:	
Persistence:	Not likely to move rapidly because of its low water solubility.

13. DISPOSAL CONSIDERATIONS

Waste from Residues/ Unused Product:	Reuse or reprocess, if possible. Dispose in accordance with all applicable regulations. May be hazardous under U.S. EPA RCRA regulations. Contact your local environmental agency for specific rules. Return unused product in original container to supplier. Contact supplier if guidance is required.
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Contaminated Packaging:

Containers should be disposed of in an environmentally safe manner. Empty drums should be completely drained. Inspect empty containers before reuse. May contain product residues which could produce flammable vapors.

14. TRANSPORT INFORMATION

Proper Shipping Name: NATURAL GAS, COMPRESSED
UN/Id No: 1971
Hazard Class or Division: 2.1
Packing Group: I
Labeling Requirements: Required
Dot Label: Flammable gas

15. REGULATORY INFORMATION

U.S. Regulations:

SARA Title III Sections 311/312: SARA Hazard Categories: Acute Health Hazard. Chronic Health Hazard. Fire Hazard.

Components - Units Natural gas, petroleum, raw liquid mix
64741-48-6 (>99 %)

SARA Title III Section 302 Extremely Hazardous Substance: No

SARA Title III Section 313 Threshold (pounds): NA

CERCLA/SARA - Hazardous Substances and their Reportable Quantities: NA

Components - Units Hexane
110-54-3 (<1 %)

SARA Title III Section 302 Extremely Hazardous Substance: No

SARA Title III Section 313 Threshold (pounds): 1.0

CERCLA/SARA - Hazardous Substances and their Reportable Quantities: 5000

National Inventory Status:

TSCA: All components are either listed under TSCA or are exempt.

State Regulations:

16. OTHER INFORMATION

Technical Information: 1-713-215-7353

Reason for Revision: Not applicable

Additional Advice: Before using any product, read all warnings and directions on the label.

Product Name: NGL MIX

Page: 7 of 8

IMPORTANT:

The information provided in this safety data sheet is accurate to the best of our knowledge, or is obtained from sources believed to be accurate at the time of its publication. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SUITABILITY, STABILITY OR OTHERWISE. The information included herein is not intended to be all-inclusive as to the appropriate manner and/or conditions of use, handling and/or storage. Factors pertaining to certain conditions of storage, handling, or use of this product may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended to, and nothing herein shall be construed as a recommendation to, infringe any existing patents or violate any laws, regulations or ordinances of any governmental entity.

Common Short Forms:

CAS: Chemical Abstract Service
COC: Cleveland Open Cup
g/L: grams per Liter
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
IDLH: Immediately Dangerous to Life or Health
LEL: Lower Explosive Limit
lbs/gal: pounds per gallon
NA: Not Applicable
NFPA: National Fire Protection Association
ND: Not Determined
NTP: National Toxicology Program
PPE: Personal Protective Equipment
ppm: Parts per Million
RQ: Reportable Quantity
TCC: Tag Closed Cup
UEL: Upper Explosive Limit

MSDS: Produced Brine Water

MATERIAL SAFETY DATA SHEET



Print date: 19-May-2005

Revision date: NA

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification: Occidental Oil and Gas Corporation
5 E. Greenway Plaza
Suite 110
Houston, TX 77046

Emergency Telephone Number: CHEMTREC: 1-800-424-9300

Product Code: OOGC005

Product Name: PRODUCED BRINE WATER

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:	Causes eye irritation.
Color:	Colorless.
Appearance:	Clear liquid.
Odor:	Salty.

Potential Health Effects:

Inhalation:	No effects expected.
Eye contact:	Mild eye irritation.
Skin contact:	Non-irritating to the skin.
Ingestion:	May cause gastrointestinal upset . Large amounts may cause an increase in blood pressure.

Chronic Overexposure: No known effects

Carcinogen Status:

Components - Units	NTP	IARC 1	IARC 2	OSHA (SRC*)
Water 7732-18-5 (90 %)	Not listed	Not listed	Not listed	
Calcium chloride 10043-52-4 (<10 %)	Not listed	Not listed	Not listed	
Potassium Chloride 7447-40-7 (<10 %)	Not listed	Not listed	Not listed	
Sodium chloride (NaCl) 7647-14-5 (<10 %)	Not listed	Not listed	Not listed	

*SRC = Specifically Regulated Chemical

Medical Conditions Aggravated by Exposure: No information available

HMIS:

(Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health:

1

Flammability:

0

Reactivity:

0

3. COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients:**

Components - Units	CAS-No	Concentration	ACGIH Full Shift TWA	OSHA Full Shift PEL	OSHA Full Shift PEL (Vacated)
Water - PPH	7732-18-5	90			
Calcium chloride - PPH	10043-52-4	<10			
Potassium Chloride - PPH	7447-40-7	<10			
Sodium chloride (NaCl) - PPH	7647-14-5	<10			

* PPH=Percent (%)

4. FIRST AID MEASURES**Inhalation:**

If symptoms develop, seek medical attention.

Skin Contact:

If irritation or adverse symptoms develop, seek medical attention.

Eye Contact:

Flush with plenty of water. If symptoms persist, call a physician.

Ingestion:

If illness or adverse symptoms develop, seek medical attention.

5. FIRE-FIGHTING MEASURES**Flash point:**

NA

Method:

NA

Extinguishing Media:

Use media appropriate for surrounding fire.

Extinguishing Media NOT to be

None known

Used for Safety Reasons:**Hazardous Combustion Products:**None known.**Specific Hazards:**

None known.

IDLH:

NA

**Special Protective Equipment
for Firefighters:**

The product is not flammable.

Flammability Limits in Air:

Lower

NA

Upper

NA

NFPA:**Health:**

0

Flammability:

0

Reactivity/Instability:

0

6. ACCIDENTAL RELEASE MEASURES**Personal Precautions:**

Wear personal protective equipment as per Section 8.

Environmental Precautions:

Stop leak if possible without personal risk. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material.

Methods for Cleaning Up:

Mop up or absorb in any available absorbent.

7. HANDLING AND STORAGE

Handling Procedures: Avoid contact with eyes.

Storage Conditions: No special storage conditions required.

Incompatible Substances: No materials to be especially mentioned.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment:

Eye Protection: Safety glasses with side-shields.

Skin and Body Protection: No additional equipment required.

Hand Protection: Wear appropriate gloves.

Protective Material Types: Rubber. Liquid proof.

Respiratory Protection: Not generally required. In case of insufficient ventilation, wear suitable respiratory equipment. When exposure limits may be exceeded, wear respiratory equipment as per U.S. OSHA 29 CFR 1910.134. In case of mist, spray or aerosol exposure, a filtering facepiece may be appropriate.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid					
Appearance:	Clear liquid.	Color:	Colorless.	Odor:	Salty.
Boiling Point/Range:	212 F (100 C)	Melting Point/Range:	No data available	Freezing Point/Range:	No data available
Vapor Density: (air=1)	10 lb/gal	Bulk Density:	No data available	Density:	No data available
Viscosity:			1 cp @ 100 F (37.8 C)		
Vapor Pressure:			< 0.36 psia @ 70 F (21 C)		
Specific Gravity (water=1):			1		
Water Solubility:			Completely soluble		
Partition Coefficient (n-octanol/water):			No data available		
Evaporation Rate (nBuAc=1):			< 1		
Volatility:			100%		
VOC Content (%):			0		

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions to Avoid:	None known
Incompatibilities/ Materials to Avoid:	No materials to be especially mentioned
Hazardous Decomposition Products:	None
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Target Organs:	Eyes.
Acute Toxicity:	See Section 2 of this MSDS for acute symptoms of overexposure.
Primary Irritation:	
Eye Irritation:	Mild eye irritation.
Skin Irritation:	Non-irritating to the skin.
Inhalation:	Inhalation of mist or aerosol may cause irritation to the upper respiratory tract.

Toxicity Testing:

Components - Units	LC50/Inhalation /4h/Rat:	LC50/Inhalation /8h/Rat:	LD50/Dermal /Rabbit:	LD50/Oral /Rat:
Sodium chloride (NaCl) 7647-14-5 (<10 %)		42 g/m ³ Rat 1h		

Reproductive Toxicity:	No data is available on the product itself.
Chronic Toxicity:	No effects expected.
Carcinogenic Effects:	See Section 2 of this MSDS for carcinogenicity of components.

12. ECOLOGICAL INFORMATION

Product Information:	No data are available on the product itself.
Ecotoxicity Data:	
Fate and Transport:	
Biodegradation:	Inherently biodegradable.
Persistence:	Will not persist.
Bioconcentration:	This material is not expected to bioconcentrate in organisms.
Bioaccumulative :	Does not bioaccumulate.
Aquatic Toxicity:	Increase in water salinity may have adverse effects on aquatic organisms.

13. DISPOSAL CONSIDERATIONS

Waste from Residues/ Unused Product:	Reuse or reprocess, if possible. May be hazardous under U.S. EPA RCRA regulations. Dispose in accordance with all applicable regulations. Contact your local environmental agency for specific rules. Solutions with high ph-value must be neutralised before discharge..
---	---

Contaminated Packaging: Not applicable.

14. TRANSPORT INFORMATION

Proper Shipping Name: Not applicable
UN/Id No: NA
Hazard Class or Division: NA
Packing Group: NA
Labeling Requirements: NA

15. REGULATORY INFORMATION

U.S. Regulations:

SARA Title III Sections 311/312: SARA Hazard Categories: Acute Health Hazard.

Components - Units Water
7732-18-5 (90 %)
SARA Title III Section 302 Extremely Hazardous Substance: No
SARA Title III Section 313 Threshold (pounds): NA
CERCLA/SARA - Hazardous Substances and their Reportable Quantities: NA

Components - Units Calcium chloride
10043-52-4 (<10 %)
SARA Title III Section 302 Extremely Hazardous Substance: No
SARA Title III Section 313 Threshold (pounds): NA
CERCLA/SARA - Hazardous Substances and their Reportable Quantities: NA

Components - Units Potassium Chloride
7447-40-7 (<10 %)
SARA Title III Section 302 Extremely Hazardous Substance: No
SARA Title III Section 313 Threshold (pounds): NA
CERCLA/SARA - Hazardous Substances and their Reportable Quantities: NA

Components - Units Sodium chloride (NaCl)
7647-14-5 (<10 %)
SARA Title III Section 302 Extremely Hazardous Substance: No
SARA Title III Section 313 Threshold (pounds): NA
CERCLA/SARA - Hazardous Substances and their Reportable Quantities: NA

National Inventory Status:

TSCA: All components are either listed under TSCA or are exempt.

State Regulations:

16. OTHER INFORMATION

Technical Information: 1-713-215-7353

Reason for Revision: Not applicable

Additional Advice: Before using any product, read all warnings and directions on the label.

IMPORTANT:

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Common Short Forms:

CAS: Chemical Abstract Service
COC: Cleveland Open Cup
g/L: grams per Liter
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
Group 1 – Causes cancer in humans
Group 2A – Probably causes cancer in humans
Group 2B – Possibly causes cancer in humans
IDLH: Immediately Dangerous to Life or Health
LEL: Lower Explosive Limit
lbs/gal: pounds per gallon
NA: Not Applicable
NFPA: National Fire Protection Association
ND: Not Determined
NTP: National Toxicology Program
PPE: Personal Protective Equipment
ppm: Parts per Million
RQ: Reportable Quantity
TCC: Tag Closed Cup
UEL: Upper Explosive Limit



St. Mary's
CareFlight

2635 N. 7th Street • P.O. Box 1628 • Grand Junction, CO 81502-1628



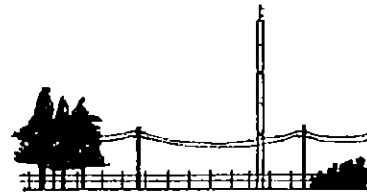
HOW TO PREPARE A LANDING ZONE 1-800-332-4923

Selecting an On-Scene LZ (Landing Zone)

First, determine if the area is large enough to land the CareFlight helicopter safely. The landing surface should be flat, firm, and free of debris that would blow up into the rotor system or be a hazard to persons at the scene.

Touchdown Area: The touchdown area should be square with a minimum of 100 feet on each side.

The landing site should be clear of people, vehicles, and obstructions such as trees, poles, and wires. **Keep in mind that wires cannot be seen from the air at night.** The landing site must be free of stumps, brush, posts, and large rocks.



Select a landing site clear of trees, poles and wires.

Wind Direction & Touchdown Area

Consider the wind direction. Helicopters land and take off into the wind. Inform the pilot of the direction from which the wind is blowing. *i.e. "Wind from the north."*

Is the approach and departure path free of obstructions (wires, poles, antennas, trees, etc.)? If there are obstructions, please tell the CareFlight team during the initial radio call.



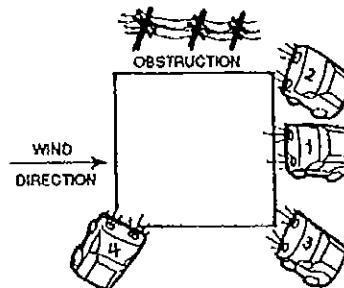
Keep approach/departure path free of obstructions.

Illumination of the LZ at Night

Mark the touchdown area with five lights/road flares (one in each corner and one indicating wind direction).

When using automobile(s), place the vehicle(s) in position based upon the number of vehicles available. For instance, if only one vehicle is available, place it in vehicle #1 position (pointing into the wind). If two vehicles are available, place them in vehicle #1 and #2 positions, etc. Use any additional vehicles (if more than 3 available) to illuminate flight and landing surface obstacles.

At night, assure that spotlights, floodlights, vehicle lights, and handlights used to define the LZ and obstacles are not pointed toward the helicopter. Turn off non-essential lights. White lights, such as spotlights, flash bulbs, and headlights ruin the pilot's night vision and temporarily blind him. Red lights or blue lights, however, are very helpful in finding accident locations and do not have a detrimental effect on the pilot's night vision.

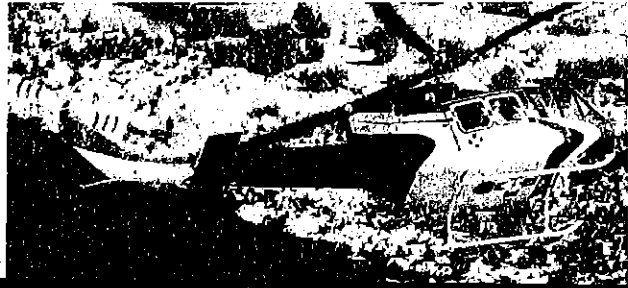


When using automobiles to illuminate the nighttime landing zone, place in the positions as shown above.

1



St. Mary's
CareFlight



HOW TO PREPARE A LANDING ZONE (cont.)

Personnel Safety

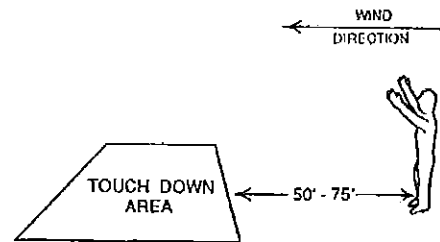
Keep spectators at least 200 feet from the touchdown area. Keep emergency service personnel at least 100 feet away, if possible. Encourage everyone working near the helicopter to wear eye protection.

Remove hats or helmets or fasten chin straps (no loose hats blowing up through the rotors)!

Rules of Thumb for Safe Distances:

- 100 feet from helicopter to waiting ambulance
- 200 feet from helicopter to crowds & pedestrians
- 300 feet from the helicopter to stopped traffic
- 200-400 feet from accident victims to traffic

Ground Guide: When CareFlight arrives at the scene, **only one person** should give LZ, wind, and obstacle instructions. That person should wear eye protection and they should stand with their back to the wind and arms raised over head to indicate the direction of the wind, which will usually be the opposite of the landing direction. As the helicopter turns into the wind, and begins the final descent, the ground guide should leave to a safer area.



Ground guide should stand with their back to the wind, and with arms raised over their head to indicate direction of the wind.

Communications

One person, the LZ coordinator, will be responsible for all communication with the pilot. The LZ coordinator should monitor the radio at all times when the helicopter is running. It is CareFlight's policy to monitor the LZ frequency for at least two minutes after departure.

Every attempt will be made to contact the LZ coordinator on the frequency specified in the dispatch call. In the event that communication cannot be established on that frequency, the helicopter will monitor NLEC (National Law Enforcement Channel).

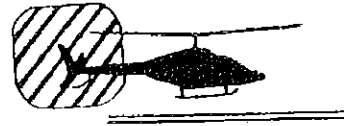
Please immediately report to the pilot any observed hazards and wait for his acknowledgement.

Safety Summary

The St. Mary's CareFlight team can serve YOU only if we arrive safely. Our safety and the safety of the people on the ground depends on your professionals and CareFlight working together as a team.

General Helicopter Safety Rules

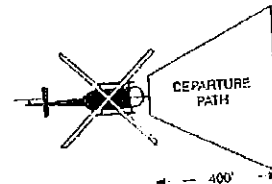
- The pilot will perform as many high reconnaissance orbits as they feel necessary to insure a safe landing.
- When working around any helicopter, never approach from the rear. Always approach and depart the aircraft towards the front so you can see the pilot and so he can see you.
- The LZ coordinator will designate as many persons as necessary for crowd control.
- If the helicopter is landed on a slope, approach and depart from the down-slope side, unless that is the rear of the helicopter. In that circumstance, approach from the left or right from the most level ground and in plain sight of the pilot.
- When the helicopter is loaded and ready for take-off, keep the departure path free of vehicles and spectators or rescue personnel. If an emergency were to occur during take-off, we would need this area to execute our landing.



Approach and depart helicopter from the front, so the pilot can see you.



Approach and depart helicopter from the down-slope side.



Keep departure path free of vehicles, spectators and rescue personnel.

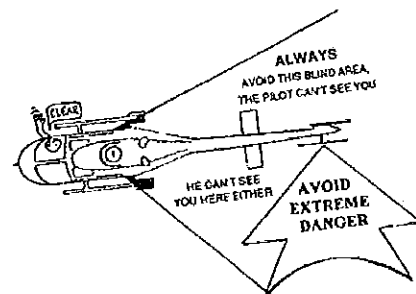
Assisting the CareFlight team

Once CareFlight has landed, only briefed emergency personnel should approach the helicopter. Be sure to receive a "go-ahead" sign from the pilot before stepping under the rotor tip path and then approach from the front of the helicopter.

A landing zone coordinator should be prepared to assist the crew by providing security for the helicopter. The tail rotor is the most dangerous area. If asked to provide security, do not allow anyone but the crew to approach the helicopter.

Note: The Bell 412 loads from the left or right side, feet first.

Designate two or three personnel to assist the CareFlight team in loading the patient. When approaching or departing the helicopter, always be aware of the tail rotor and always follow the CareFlight team's directions or the pilot's directions for your own safety.



Be sure to receive a "go-ahead" sign from the pilot before approaching the helicopter. Always be aware of the tail rotor, the most dangerous area.

Hazardous Chemicals/Gases

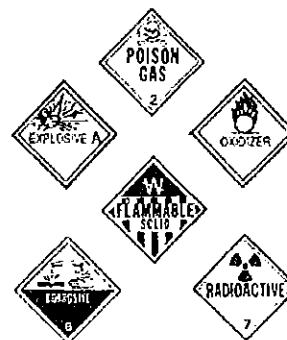
Accidents involving hazardous materials require special handling by Fire/Rescue units on the ground. The preparations for helicopters responding to these accidents also require special considerations.

Helicopter medical crews normally do not carry protective suits or breathing apparatuses to protect them from hazardous materials. Upon initial radio contact, the CareFlight team must be made aware of any hazardous materials or gases in the area. If the aircraft were to fly through the hazardous gases, the crew could be poisoned and the engines could develop mechanical problems, or cause an explosion or fire. Never assume that the crew has already been informed of the Hazmat situation.

Hazardous materials of concern are toxic, poisonous, flammable, explosive, irritating, or radioactive in nature. Patients exposed to hazardous materials will require decontamination prior to air transport to avoid contamination of the crew and aircraft.

Some radioactive materials are more dangerous than others, depending upon the type and amounts of those materials. In general, radioactive materials are difficult to ignite, but will burn, and the smoke is toxic.

The CareFlight team should be advised if victims may be contaminated by radioactivity.



CareFlight must be notified of hazardous materials on the scene in order to avoid contamination of the flight team and aircraft.

Hazardous Materials LZ Preparation and Considerations

Helicopter landing zones must be selected to avoid possibility of compromising the safety of the CareFlight team and adjacent people and property.

When explosives, poisonous gases/vapors, or chemicals in danger of exploding and burning are on site, **helicopter landing zones must be prepared upwind**, a safe distance (may be as much as one mile) from the hazardous material accident site, and never in low-lying areas. The toxic gases or vapors may be heavier than air and gather in these low-lying areas.

For hazardous material accidents involving radioactive materials, the **CareFlight LZ must be prepared upwind, a safe distance (may be 1/4 mile) from accident**, unless there are radioactive gases (steam or smoke), and in this case, the LZ must be at least one mile upwind of the accident site.

DESIGNATED HELIPADS

SITE COORDINATES PAD #1

**NORTH 39 Degrees 25.906
Minutes**

**WEST 108 Degree 09.752 Minutes
Elevation 8,755 Feet**

SITE COORDINATES PAD #2

**NORTH 39 Degrees 26.382
Minutes**

**WEST 108 Degree 10.329 Minutes
Elevation 8,908 Feet**

SITE COORDINATES PAD #3

**NORTH 39 Degrees 30.014
Minutes**

**WEST 108 Degree 10.924 Minutes
Elevation 8,415 Feet**

SITE COORDINATES PAD #4

**NORTH 39 Degrees 30.852
Minutes**

**WEST 108 Degree 11.982 Minutes
Elevation 8,400 Feet**

SITE COORDINATES PAD #5

**NORTH 39 Degrees 32.112
Minutes**

**WEST 108 Degree 13.295 Minutes
Elevation 8,409 Feet**

SITE COORDINATES PAD #6

**NORTH 39 Degrees 31.612
Minutes**

**WEST 108 Degree 13.654 Minutes
Elevation 8,350 Feet**

SITE COORDINATES PAD #7

**NORTH 39 Degrees 30.048
Minutes**

**WEST 108 Degree 13.465 Minutes
Elevation 8,250 Feet**

SITE COORDINATES PAD #8 - VALLEY

**NORTH 39 Degrees 28.109
Minutes**

**WEST 108 Degree 14.682 Minutes
Elevation 5,884 Feet**

SITE COORDINATES PAD #9

**NORTH 39 Degrees 33.045
Minutes**

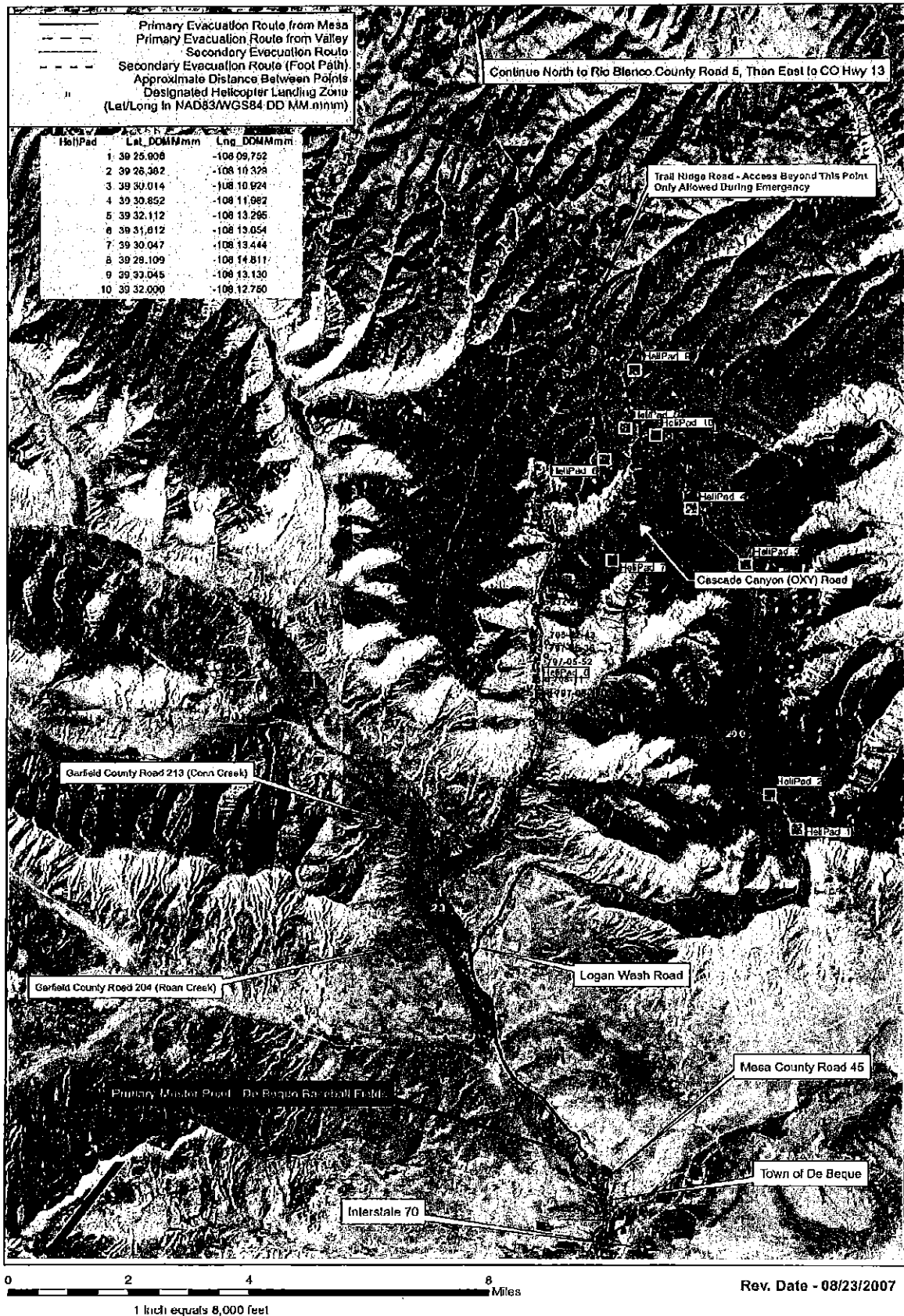
**WEST 108 Degree 13.127 Minutes
Elevation 8,606 Feet**

SITE COORDINATES PAD #10


**NORTH 39 Degrees 32.000
Minutes**

**WEST 108 Degree 12.750 Minutes
Elevation 8,795**

OXY USA WTP LP EMERGENCY EVACUATION ROUTES



INITIAL INCIDENT REPORT FORM(S)



OXY-ROCKIES
Initial Incident Report Form

Purpose & Scope
 To provide guidelines for preparing a chronological record of events, notifications, actions taken, and other pertinent information while operating under the Emergency Response Plan (ERP). Please list all known information/data that relates to the emergency situation.

Initial Report of an Emergency

Date: _____ Time: _____ AM PM Location of Incident: _____

Person Reporting Incident:
 Name: _____ Phone: _____

Company: _____ Job Title: _____

Nature of Emergency:

<input type="checkbox"/> Fire	<input type="checkbox"/> Rupture or Serious Leak	<input type="checkbox"/> Explosion
<input type="checkbox"/> Landslide	<input type="checkbox"/> Earthquake	<input type="checkbox"/> Flood
<input type="checkbox"/> Automatic ESD	<input type="checkbox"/> Land Subsidence	<input type="checkbox"/> Other
<input type="checkbox"/> Injury/Illness	<input type="checkbox"/> Vehicle Collision	

Statement of Incident
 Detailed Description of Incident:
 (List job steps taken, PPE utilized, what you observed, and any other pertinent information)

Complete Reverse Side

OXY-Rockies-Chronological Record of Events Form Revision 3 by jpb 06.25.08 @ 11:59am

Police Notified: ☐ Yes ☐ No Fire or Emergency Services Notified ☐ Yes ☐ No

Notification(s) (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Important Information (use attachment if necessary):

Please submit the following documentation with this report:

- ☐ Job Permit and/or JSA (Job Safety Analysis)
- ☐ Any other applicable permits issued (hot work, excavation, confined space, lockout/tagout etc.)
- ☐ Tailgate Safety Meeting Sign-In Sheet
- ☐ If a near-miss, OXY APO/Near Miss Form
- ☐ If a fire, OXY Fire Report Form
- ☐ If a spill, OXY Spill Report Form
- ☐ If a OXY vehicle incident, Vehicle Packet Form(s)
- ☐ Accident/Incident Statement Form (All individuals that witnessed or involved with the incident)

OXY-Rockies-Chronological Record of Events Form Revision 3 by jpb 06.25.08 @ 11:59am

OXY-ROCKIES

Initial Incident Report Form

Purpose & Scope

To provide guidelines for preparing a chronological record of events, notifications, actions taken, and other pertinent information while operating under the Emergency Response Plan (ERP). Please list all know information/data that relates to the emergency situation.

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Person Reporting Incident:

Name: _____ Phone: _____

Company: _____ **Job Title:** _____

Nature of Emergency:

_____ Fire	_____ Rupture or Serious Leak	_____ Explosion
_____ Landslide	_____ Earthquake	_____ Flood
_____ Automatic ESD	_____ Land Subsidence	_____ Other
_____ Injury/Illness	_____ Vehicle Collision	

Statement of Incident

Detailed Description of Incident:

(List job steps taken, PPE utilized, what you observed, and any other pertinent information)

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Complete Reverse Side

Police Notified: ____ Yes ____ No Fire or Emergency Services Notified ____ Yes ____ No

Notification(s) (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Important Information (use attachment if necessary):

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- ☐ If a spill, OXY Spill Report Form
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To provide guidelines for preparing a chronological record of events, notifications, actions taken, and other pertinent information while operating under the Emergency Response Plan (ERP). Please list all know information/data that relates to the emergency situation.

Date: _____ Time: _____ AM PM Location of Incident: _____

Name: _____ Phone: _____

Company: _____ **Job Title:** _____

Fire	Rupture or Serious Leak	Explosion
Landslide	Earthquake	Flood
Automatic ESD	Land Subsidence	Other
Injury/Illness	Vehicle Collision	

(List job steps taken, PPE utilized, what you observed, and any other pertinent information)

1

Revision 3 by jrh 06.25.08 @ 11:59am

Police Notified: ____ Yes ____ No Fire or Emergency Services Notified ____ Yes ____ No

Notification(s) (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Important Information (use attachment if necessary):

Please submit the following documentation with this report:

- ☐ Job Permit and/or JSA (Job Safety Analysis)
- ☐ Any other applicable permits issued (hot work, excavation, confined space, lockout/tagout etc.)
- ☐ Tailgate Safety Meeting Sign-In Sheet
- ☐ If a near-miss, OXY APO/Near Miss Form
- ☐ If a fire, OXY Fire Report Form
- ☐ If a spill, OXY Spill Report Form
- ☐ If a OXY vehicle incident, Vehicle Packet Form(s)
- ☐ Accident/Incident Statement Form (All individuals that witnessed or involved with the incident)



Initial Incident Report Form

Purpose & Scope

To provide guidelines for preparing a chronological record of events, notifications, actions taken, and other pertinent information while operating under the Emergency Response Plan (ERP). Please list all know information/data that relates to the emergency situation.

Initial Report of an Emergency

Date: _____ Time: _____ AM PM Location of Incident: _____

Person Reporting Incident:

Name: _____ Phone: _____

Company: _____ **Job Title:** _____

Nature of Emergency:

Fire	Rupture or Serious Leak	Explosion
Landslide	Earthquake	Flood
Automatic ESD	Land Subsidence	Other
Injury/Illness	Vehicle Collision	

Statement of Incident

Detailed Description of Incident:

(List job steps taken, PPE utilized, what you observed, and any other pertinent information)

1

Complete Reverse Side

Police Notified: ____ Yes ____ No Fire or Emergency Services Notified ____ Yes ____ No

Notification(s) (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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Notification(s) (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____
_____	_____	_____

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Purpose & Scope

To provide guidelines for preparing a chronological record of events, notifications, actions taken, and other pertinent information while operating under the Emergency Response Plan (ERP). Please list all know information/data that relates to the emergency situation.

Initial Report of an Emergency

Date: _____ Time: _____ AM PM Location of Incident: _____

Person Reporting Incident:

Name: _____ Phone: _____

Company: _____ **Job Title:** _____

Nature of Emergency:

Fire	Rupture or Serious Leak	Explosion
Landslide	Earthquake	Flood
Automatic ESD	Land Subsidence	Other
Injury/Illness	Vehicle Collision	

Statement of Incident

Detailed Description of Incident:

(List job steps taken, PPE utilized, what you observed, and any other pertinent information)

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Complete Reverse Side

Police Notified: ____ Yes ____ No Fire or Emergency Services Notified ____ Yes ____ No

Notification(s) (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Important Information (use attachment if necessary):

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_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
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_____	_____	_____
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Date: _____ Time: _____ AM PM Location of Incident: _____

Name: _____ Phone: _____

Company: _____ **Job Title:** _____

Fire	Rupture or Serious Leak	Explosion
Landslide	Earthquake	Flood
Automatic ESD	Land Subsidence	Other
Injury/Illness	Vehicle Collision	

(List job steps taken, PPE utilized, what you observed, and any other pertinent information)

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears slightly aged or off-white. There is no handwriting or other markings on the page.

Revision 3 by jrh 06.25.08 @ 11:59am

Police Notified: ____ Yes ____ No Fire or Emergency Services Notified ____ Yes ____ No

Notification(s) (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
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Other Actions Taken (use attachment if necessary):

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_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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Initial Incident Report Form

Purpose & Scope

To provide guidelines for preparing a chronological record of events, notifications, actions taken, and other pertinent information while operating under the Emergency Response Plan (ERP). Please list all know information/data that relates to the emergency situation.

Initial Report of an Emergency

Date: _____ Time: _____ AM PM Location of Incident: _____

Person Reporting Incident:

Name: _____ **Phone:** _____

Company: _____ **Job Title:** _____

Nature of Emergency:

Fire	Rupture or Serious Leak	Explosion
Landslide	Earthquake	Flood
Automatic ESD	Land Subsidence	Other
Injury/Illness	Vehicle Collision	

Statement of Incident

Detailed Description of Incident:

(List job steps taken, PPE utilized, what you observed, and any other pertinent information)

1

Complete Reverse Side

Police Notified: ____ Yes ____ No Fire or Emergency Services Notified ____ Yes ____ No

Notification(s) (use attachment if necessary):

Date/Time	Name	Location
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_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
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OXY-ROCKIES

Initial Incident Report Form

Purpose & Scope

To provide guidelines for preparing a chronological record of events, notifications, actions taken, and other pertinent information while operating under the Emergency Response Plan (ERP). Please list all know information/data that relates to the emergency situation.

Initial Report of an Emergency

Date:_____ Time:_____AM PM Location of Incident:_____

Person Reporting Incident:

Name: _____ Phone: _____

Company: _____ **Job Title:** _____

Nature of Emergency:

Fire	Rupture or Serious Leak	Explosion
Landslide	Earthquake	Flood
Automatic ESD	Land Subsidence	Other
Injury/Illness	Vehicle Collision	

Statement of Incident

Detailed Description of Incident:

(List job steps taken, PPE utilized, what you observed, and any other pertinent information)

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Notification(s) (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Actions Taken (use attachment if necessary):

Date/Time	Name	Location
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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- ☐ Accident/Incident Statement Form (All individuals that witnessed or involved with the incident)

Accident / Incident Statement	
NAME:	DATE:
ID:	LOCATION:
DEPARTMENT:	TASK:
SUPERVISOR:	TIME:
SIGNATURE: _____	
STATEMENT: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	
PAGE OF PAGES	

Accident / Incident Statement

NAME:	DATE:
ID:	LOCATION:
DEPARTMENT:	TASK:
SUPERVISOR:	TIME:

SIGNATURE:

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PAGE OF PAGES

SPILL REPORT FORM(S)

SPILL REPORT FORM			
Spill Report to be entered into the KMS Database			
Responsible Team	Team Leader	Agency Case #	
Lease	Field	County	
State Spill Occurred	Type of Spill (OIL, WATER, OTHER)	Location	State Lease
Legal Property Description	Land Owner	Date and Time of Spill	Is Spill Agency Reportable Yes <input type="checkbox"/> No <input type="checkbox"/>
Reporting Employee	Reporting Employee Phone		
BBLs Oil Spilled	BBLs Produced Water Spilled	Other Spill (CHEMICAL) Volume	Other Spill Product (CHEMICAL)
BBLs Oil Rcvd	BBLs P. Water Rcvd	Other Volume Rcvd	
<input type="checkbox"/> RECORDABLE <input type="checkbox"/> NON RECORDABLE	Cause of Leak	Type of Leak	
Type of Pipe	Size of Pipe (Inches)		
Description of Cause			
Driving Directions to Site		Remedial Action (required for all spills)	
Hours Down	Lost Injection	Valve #	Location
(required) Estimated Clean-Up Cost _____ Damaged Soil - Width _____ x Length _____ x Depth _____			
Agency - COGCC Date/Time Notified _____ Person Notified at Agency _____			
Person Reporting to Agency - _____ How could you prevent this from re-occurring? Contact Person _____			

SPILL REPORT FORM

Spill Report to be entered into the KMS Database

OXY RMA ☐

Revised 8/08/2007 - ac

Responsible Team	Team Leader	Agency Case #	
Lease	Field	County	
State Spill Occurred	Type of Spill (OIL, WATER, OTHER)	Location	State Lease
Legal Property Description	Land Owner	Date and Time of Spill	Is Spill Agency Reportable Yes <input type="checkbox"/> No <input type="checkbox"/>
Reporting Employee	Reporting Employee Phone		
BBLS Oil Spilled	BBLS Produced Water Spilled	Other Spill (CHEMICAL) Volume	Other Spill Product- (CHEMICAL)
BBLS Oil Rcvd	BBLS P. Water Rcvd	Other Volume Rcvd	
<input type="checkbox"/> RECORDABLE <input type="checkbox"/> NON RECORDABLE	Cause of Leak	Type of Leak	
Type of Pipe	Size of Pipe (Inches)		
Description of Cause			
Driving Directions to Site		Remedial Action (required for all spills)	
Hours Down-	Lost Injection-	Valve #	Location

(required) Estimated Clean-Up Cost _____ Damaged Soil - Width _____ x Length _____ x Depth _____

Agency - COGCC Date/Time Notified _____ Person Notified at Agency _____

Person Reporting to Agency - _____ How could you prevent this from re-occurring?

Contact Person

FIRE REPORT FORM(S)

OXY FIRE REPORT FORM	
RESPONSIBLE TEAM	
Location	
DATE OF FIRE OR EXPLOSION	
ESTIMATED LOSS	
CLASS OF PROPERTY (CHECK ONE)	
<input type="checkbox"/> OIL OR GAS PRODUCING LEASE	<input type="checkbox"/> BULK PLANT OR TERMINAL
<input type="checkbox"/> TANK FARM	<input type="checkbox"/> SERVICE STATION
<input type="checkbox"/> PIPE LINE STATION AND TRUNK LINES	<input type="checkbox"/> TANK TRUCK
<input type="checkbox"/> NATURAL GAS PROCESSING PLANTS	<input type="checkbox"/> UNCLASSIFIED PROPERTY
<input type="checkbox"/> RADIUM	<input type="checkbox"/> PETROCHEMICAL OR CHEMICAL PLANTS
OXY FARM BASIC CAUSE (CHECK ONE)	
<input type="checkbox"/> MAINTENANCE	<input type="checkbox"/> JOBS PLANNING
<input type="checkbox"/> INSPECTION	<input type="checkbox"/> HOUSEKEEPING
<input type="checkbox"/> DESIGN	<input type="checkbox"/> INSTRUCTIONS NOT FOLLOWED
<input type="checkbox"/> OPERATIONS	<input type="checkbox"/> TRAINING
<input type="checkbox"/> CORROSION UNCONTROLLED REACTION	<input type="checkbox"/> SHUTDOWN
OTHER (DESCRIBE)	
EQUIPMENT INITIALLY INVOLVED (CHECK ONE)	
<input type="checkbox"/> PUMPS	<input type="checkbox"/> BUILDING
<input type="checkbox"/> COMPRESSORS	<input type="checkbox"/> FALLING OR WORKOVER EQUIPMENT
<input type="checkbox"/> EXCHANGERS	<input type="checkbox"/> TREATERS (OIL FIELD)
<input type="checkbox"/> BURNERS HEATERS	<input type="checkbox"/> SERVICE STATION EQUIPMENT
<input type="checkbox"/> PIPING	<input type="checkbox"/> INSULATION
<input type="checkbox"/> VESSELS	<input type="checkbox"/> RAILROAD EQUIPMENT
<input type="checkbox"/> TANKS	<input type="checkbox"/> MARINE EQUIPMENT
<input type="checkbox"/> INSTRUMENTATION	<input type="checkbox"/> BOILERS
<input type="checkbox"/> ELECTRICAL MOTORS OR EQUIPMENT	<input type="checkbox"/> OTHER (DESCRIBE)
<input type="checkbox"/> MOTOR VEHICLE	
SOURCE OF IGNITION (CHECK ONE)	
<input type="checkbox"/> ELECTRICAL	<input type="checkbox"/> ENGINES GASOLINE DIESEL TURBINE
<input type="checkbox"/> LIGHTNING	<input type="checkbox"/> SPREAD FROM OUTSIDE
<input type="checkbox"/> CUTTING WELDING	<input type="checkbox"/> FRICTION
<input type="checkbox"/> FUSED FLAME-ENL. FURNACES	<input type="checkbox"/> STATIC ELECTRICITY
<input type="checkbox"/> SMOKING MATCHES	<input type="checkbox"/> ARSON
<input type="checkbox"/> HOT SURFACE	<input type="checkbox"/> CHEMICAL REACTION
<input type="checkbox"/> SPONTANEOUS AUTOIGNITION	<input type="checkbox"/> FLARES
<input type="checkbox"/> PYROPHORIC MATERIAL	<input type="checkbox"/> OTHER (DESCRIBE)
TYPE OF FUEL (CHECK ONE)	
<input type="checkbox"/> EQUIPMENT FAILURE	<input type="checkbox"/> SPILL OVERFLOW
<input type="checkbox"/> EQUIPMENT LEAKAGE	<input type="checkbox"/> IMPROPER USE OF HYDROCARBON
<input type="checkbox"/> VENTS OR RELIEF DEVICES	<input type="checkbox"/> OILY RAGS OR WASTE
<input type="checkbox"/> DRAINS DRAINAGE SYSTEM	<input type="checkbox"/> OTHER (DESCRIBE)
OPERATING PHASE (CHECK ONE)	
<input type="checkbox"/> START UP	<input type="checkbox"/> LIFTSET CONDITION
<input type="checkbox"/> SHUTTING DOWN	<input type="checkbox"/> FILLING OR EMPTYING (TANKERS-TRUCKS)
<input type="checkbox"/> MAINTENANCE OR REPAIR	<input type="checkbox"/> ELEVATING
<input type="checkbox"/> OPERATING	<input type="checkbox"/> DISMANTLING
<input type="checkbox"/> NON-OPERATING	<input type="checkbox"/> OTHER (DESCRIBE)

OXY FIRE REPORT FORM

RESPONSIBLE TEAM			
Location			
DATE OF FIRE OR EXPLOSION			
ESTIMATED LOSS		\$	
CLASS OF PROPERTY (CHECK ONE)			
<input type="checkbox"/>	OIL OR GAS PRODUCING LEASE	<input type="checkbox"/>	BULK PLANT OR TERMINAL
<input type="checkbox"/>	TANK FARM	<input type="checkbox"/>	SERVICE STATION
<input type="checkbox"/>	PIPE LINE STATION AND TRUNK LINES	<input type="checkbox"/>	TANK TRUCK
<input type="checkbox"/>	NATURAL GAS PROCESSING PLANTS	<input type="checkbox"/>	UNCLASSIFIED PROPERTY
<input type="checkbox"/>	REFINERY	<input type="checkbox"/>	PETROCHEMICAL OR CHEMICAL PLANTS
PROBABLE BASIC CAUSE (CHECK ONE)			
<input type="checkbox"/>	MAINTENANCE	<input type="checkbox"/>	JOB PLANNING
<input type="checkbox"/>	INSPECTION	<input type="checkbox"/>	HOUSEKEEPING
<input type="checkbox"/>	DESIGN	<input type="checkbox"/>	INSTRUCTIONS NOT FOLLOWED
<input type="checkbox"/>	OPERATIONS	<input type="checkbox"/>	TRAINING
<input type="checkbox"/>	CORROSION UNCONTROLLED REACTION	<input type="checkbox"/>	UNKNOWN
OTHER (DESCRIBE)			
EQUIPMENT INITIALLY INVOLVED (CHECK ONE)			
<input type="checkbox"/>	PUMPS	<input type="checkbox"/>	BUILDING
<input type="checkbox"/>	COMPRESSORS	<input type="checkbox"/>	DRILLING OR WORKOVER EQUIPMENT
<input type="checkbox"/>	EXCHANGERS	<input type="checkbox"/>	TREATERS (OIL FIELD)
<input type="checkbox"/>	FURNACES, HEATERS	<input type="checkbox"/>	SERVICE STATION EQUIPMENT
<input type="checkbox"/>	PIPING	<input type="checkbox"/>	INSULATION
<input type="checkbox"/>	VESSELS	<input type="checkbox"/>	RAILROAD EQUIPMENT
<input type="checkbox"/>	TANKS	<input type="checkbox"/>	MARINE EQUIPMENT
<input type="checkbox"/>	INSTRUMENTATION	<input type="checkbox"/>	BOILERS
<input type="checkbox"/>	ELECTRICAL MOTORS OR EQUIPMENT	<input type="checkbox"/>	OTHER (DESCRIBE)
<input type="checkbox"/>	MOTOR VEHICLE	<input type="checkbox"/>	
SOURCE OF IGNITION (CHECK ONE)			
<input type="checkbox"/>	ELECTRICAL	<input type="checkbox"/>	ENGINES, GASOLINE, DIESEL-TURBINE
<input type="checkbox"/>	LIGHTNING	<input type="checkbox"/>	SPREAD FROM OUTSIDE
<input type="checkbox"/>	CUTTING-WELDING	<input type="checkbox"/>	FRICTION
<input type="checkbox"/>	FIXED FLAME-INCL. FURNACES	<input type="checkbox"/>	STATIC ELECTRICITY
<input type="checkbox"/>	SMOKING-MATCHES	<input type="checkbox"/>	ARSON
<input type="checkbox"/>	HOT SURFACE	<input type="checkbox"/>	CHEMICAL REACTION
<input type="checkbox"/>	SPONTANEOUS-AUTOIGNITION	<input type="checkbox"/>	FLARES
<input type="checkbox"/>	PYROPHORIC MATERIAL	<input type="checkbox"/>	OTHER (DESCRIBE)
TYPE OF FUEL		FLASHPOINT	
SOURCE OF FUEL (CHECK ONE)			
<input type="checkbox"/>	EQUIPMENT FAILURE	<input type="checkbox"/>	SPILL, OVERFLOW
<input type="checkbox"/>	EQUIPMENT LEAKAGE	<input type="checkbox"/>	IMPROPER USE OF HYDROCARBON
<input type="checkbox"/>	VENTS OR RELIEF DEVICES	<input type="checkbox"/>	OILY RAGS OR WASTE
<input type="checkbox"/>	DRAOMS. DRAOMAGE SYSTEM	<input type="checkbox"/>	OTHER (DESCRIBE)
OPERATING PHASE (CHECK ONE)			
<input type="checkbox"/>	START UP	<input type="checkbox"/>	UPSET CONDITION
<input type="checkbox"/>	SHUTTING DOWN	<input type="checkbox"/>	FILLING OR EMPTYING (TANKERS-TRUCKS)
<input type="checkbox"/>	MAINTENANCE OR REPAIR	<input type="checkbox"/>	BLEEDING
<input type="checkbox"/>	OPERATING	<input type="checkbox"/>	DISMANTLING
<input type="checkbox"/>	NON-OPERATING	<input type="checkbox"/>	OTHER (DESCRIBE)

POSSIBLE FACTORS CONTRIBUTING TO SIZE OF LOSS (CHECK THOSE APPLICABLE)			
<input type="checkbox"/>	DELAY IN DETECTING OR REPORTING FIRE	<input type="checkbox"/>	ORGANIZATION AND TRAINING
<input type="checkbox"/>	WIDESPREAD INITIAL FIRE	<input type="checkbox"/>	LACK OF MANPOWER
<input type="checkbox"/>	FIRE FIGHTING EQUIPMENT OR LACK OF	<input type="checkbox"/>	WEATHER
<input type="checkbox"/>	DRAINAGE OR LACK OF DIKING	<input type="checkbox"/>	WATER SUPPLY
<input type="checkbox"/>	SPACING	<input type="checkbox"/>	FIREPROOFING
<input type="checkbox"/>	OTHER (DESCRIBE)		
EMPLOYEE INCIDENT NUMBER: (INDICATE NUMBER)		INJURIES #	FATALITIES: #
CONCISE STATEMENT OF WHAT HAPPENED INCLUDING TYPE OF UNIT:			
REPORT PREPARED BY:			
TITLE:		TELEPHONE NUMBER:	

Attention All Drivers

OXY is now enforcing several policies that everyone needs to follow or face being banished from the OXY lease.

- 1) No vehicle at any point can be within 10 feet of any object (this means Hesco's, stairs, prod. tanks, separators etc.)
- 2) 2 hoses must be used minimum while pulling any load. This ensures the 10 foot rule.
- 3) Production oil valve buckets must not have any water or condensate in them whatsoever at any time. (drain them fully after every load no matter what.)
- 4) Use tire chocks every time the vehicle is stopped as well as following the proper cone procedures.
- 5) The ground strap must be connected before any hose gets connected to the vehicle.
- 6) All hoses must be picked up every load with NO exceptions. This means you will always have every hose on your vehicle while driving and no hose will be left on any location ever, even ponds, or on sales tanks.

These policies are now being enforced strictly by OXY and they will be followed by Old West. Please take the time to understand and follow them to the best of your ability.

Courses > Loading Procedures > *Frac Tank Loading Procedures*

Title * Frac Tank Loading Procedures

Active YES

Open Date 12-29-2008

Filename N/A [upload file](#)

[previous lesson](#) [next lesson](#)
[edit lesson](#) | [print lesson](#) | [back to Course](#)

Content

1. Obtain Job Permit, Hot Work Permit if required.
2. Walk Pad before entering. Make sure you are wearing your PPE!!
3. Communicate with 'Lead' on what tank to start filling.
4. Place two orange safety cones ten feet from anything you plan on backing up to. Use 'Spotter' honk horn and back the truck up to the cones and appropriate tank.
5. Set parking brake.
6. Do not park truck where the engine compartment is 35 feet of any wells heads, production tanks, pipelines, separators, ect.
7. Leave your cell phone in the truck.
8. If Wire Line is present, turn your cell phone off.
9. Engage PTO/ Engine Fan also in the summer.
10. Exit the truck using 'three points' technique.
11. Chock truck wheels.
12. Connect grounding cable.
13. Visually inspect water level in tank.
14. Screw in Frac tank fitting.
15. Hook up the hose.
16. Open valves on the truck and the frac tank.
17. Make sure the scrubber and relief valves are closed.
18. Engage the pump.
19. Fill the tank to the appropriate level. Max front fill level, unless instructed otherwise.
20. Monitor water level while tank is filling from top step of tank.
21. Close valves on the truck and the tank.



22. Open relief and the scrubber valves to vent pressure from the tank. Drain into 5 gallon metal pails and dump back into the tank.
23. Put the pump in neutral position.
24. Make sure the hose is dry before unhooking.
25. Unhook the hose and store on the truck.
26. Remove ground cable.
27. Remove wheel chocks.
28. Perform 360 degree walk around the truck before leaving.
29. Enter the truck cab and turn off PTO and engine fan.
30. Check mirrors and honk your horn before leaving.

Courses > Loading Procedures > *Tank Filling & Filtering Procedures For The Water Facility*

Title * Tank Filling & Filtering Procedures For The Water Facility

Active YES

Open Date 12-29-2008

Filename N/A [upload file](#)

[previous lesson](#) [next lesson](#)

[edit lesson](#) | [print lesson](#) | [back to Course](#)

Content

1. Make sure before you exit your truck that you have all of your PPE on! Then check the level of all 3 tanks.
2. Open the valves to the pump, the filter pod, and the 1500 bbl upright.
3. Start pump.
4. Set out the first two cones, back in, and then set out the other two cones.
5. Connect grounding strap from the truck to the tank.
6. Connect hose.
7. Open valves on truck and tank.
8. Engage the pump and blow off the load.
9. Visually inspect tanks when unloading.
10. After the truck is empty, disengage pump.
11. Shut the valves to the truck and tank.
12. Engage pump for suction, to suck the hose dry.
13. Suck the hose till completely dry.
14. Close the valves to the truck.
15. Disengage pump.
16. Disconnect hose.
17. Disconnect grounding strap.
18. Check level of tanks. Stay until uprights are empty.
19. Shut pump off.
20. Close valves from the tank to the pump, filter pod and 1500 bbl upright.
21. Reattach the DANGER sign on the ladder.
22. Walk a 360 degree around the truck picking up the cones.
23. Leave.



Spill Prevention Control and Countermeasure Plan

Cascade Creek Field Garfield County, Colorado



Prepared for:

**OXY USA WTP LP
Rocky Mountain Asset Team**

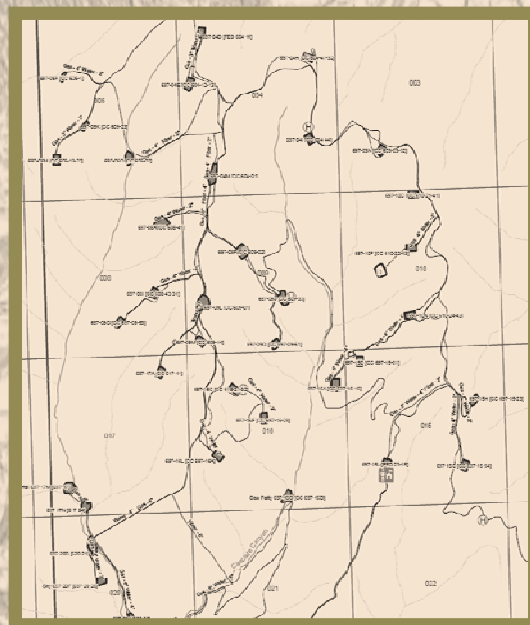
**2754 Compass Drive
Suite 170
Grand Junction, CO 81506**

Prepared by:

Walsh Environmental Scientists and Engineers, LLC

**4888 Pearl East Circle, Suite 108,
Boulder, Colorado 80301**

March 2009





Spill Prevention Control and Countermeasure Plan

Cascade Creek Field Garfield County, Colorado

Prepared for:



**OXY USA WTP LP
Rocky Mountain Asset Team**

**760 Horizon Drive #101
Grand Junction, CO 81506**

Prepared by:



**Walsh Environmental Scientists and Engineers, LLC
4888 Pearl East Circle, Suite 108, Boulder, Colorado 80301**

March 2009

Spill Prevention Control and Countermeasure Plan

Cascade Creek Field
Garfield, County

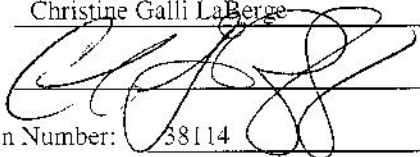
Original Date of Plan: 12/19/2008
Date of Last Plan Amendment/P.E. Certification: 3/19/2009
Date of Last Plan Review: 12/19/2008

Designated person(s) accountable for spill prevention:

John Ocana, Facilities Engineer, Cascade Creek Field (970) 985-6057

CERTIFICATION

I hereby certify that: i) I am familiar with the requirements of the SPCC Rule (40 CFR part 112), ii) I or my agent has visited the facility, iii) this SPCC Plan has been prepared in accordance with good engineering practice including consideration of applicable industry standards, and with the requirements of the SPCC Rule, iv) procedures for the required inspections and testing have been established, and v) this SPCC Plan is adequate for the facility.

Engineer: Christine Galli LaBerge
Signature: 
Registration Number: 38114
State: Colorado



NOTICE

The statements in this document are intended solely as guidance. This document is not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any party in litigation with the United States.

**SPILL PREVENTION CONTROL AND COUNTERMEASURE
COMPLIANCE INSPECTION PLAN
REVIEW PAGE**

In accordance with 40 CFR 112.5(b), a review and evaluation of this SPCC Plan is required to be conducted at least once every five (5) years. As a result of this review and evaluation, OXY will amend the SPCC Plan within six months of the review to include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility; and (2) if such technology has been field-proven at the time of review. Any technical amendment to the SPCC Plan will be certified by a Professional Engineer within six months after a change in the facility design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

Review Dates	Signature
1. <u>December 2013</u>	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____

MANAGEMENT APPROVAL

OXY USA WTP, LP agrees to provide the resources and personnel necessary to implement this SPCC Plan. I approve this SPCC Plan and expect all employees and contractors to abide by the provisions in the plan. I certify that the provisions in this SPCC Plan are being fully implemented.

Management Representative: _____

Title: _____

Signature: _____

Date: _____

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Figure 1 Sites within Cascade Creek Field

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Attachment 1 Site Specific Information Forms
Attachment 2 Secondary Containment Calculations

Appendices

Appendix A Contact Lists and Telephone Numbers
Appendix B Aboveground Storage Tank Monthly Visual Inspection Forms
Appendix C Discharge Evaluation & Event Report
Appendix D Certification of the Applicability of the Substantial Harm
 Criteria Checklist
Appendix E Emergency Response Procedures
Appendix F Loading/Unloading Warning Sign and Procedures

1.0 Overview and Organization of Plan:

The following is an overview of the organization of this Spill Prevention Control and Countermeasure Plan. This section briefly discusses the contents of each section of this Plan.

Section 2 provides the facility owner and operator, as well as their contact information including address and telephone number.

Section 3 lists facility contacts to be contacted regarding questions about the facility or in the event of a release or other site emergency.

Section 4 includes a facility description including general facility operations, storage, and drainage pathways.

Section 5 describes the physical location of the facility. This section also discusses the vicinity to towns or other landmarks and provides a general layout of site features.

Section 6 summarizes reporting information and procedures. This information will enable a person reporting a discharge to relate all relevant information to the appropriate contact.

Section 7 includes potential spill predictions, volumes, rates, and control of oil which could be discharged from the facility as a result of failure.

Section 8 explains the containment and diversionary structures or equipment used at the facility to prevent discharged oil from reaching navigable water courses.

Section 9 describes the inspections, test, and records conducted at the facility to ensure compliance with the SPCC Plan.

Section 10 discusses the personnel training and discharge prevention measures, including personnel instructions, designation of persons accountable for spill prevention, and spill prevention briefings.

Section 11 describes the site security measure taken at the facility. Several specific issues include fencing, flow valve locks, starter control locks, pipeline connection capping, and detection lighting.

Section 12 covers the facility truck loading and unloading operations, including secondary containment for vehicles, warning barrier systems, and pre-exit examination of vehicles.

Section 13 provides spill prevention procedures for the repair alteration, reconstruction or change in service of bulk storage containers.

Section 14 discusses facility drainage issues such as drainage control, diked areas, undiked areas, final discharge of drainage, and facility drainage systems and equipment.

Section 15 includes a discussion of the bulk storage tanks and associated secondary containment. Topics covered in this section include tank compatibility with contents, secondary containment design and construction, inspection and drainage of rainwater, corrosion protection, fail-safe engineering, visual observations, and appropriate positioning of supplementary tanks and other containers.

Section 16 Describes facility transfer operations, focusing on the modes of transport of liquid throughout the facility.

Section 17 Evaluates the impracticability of SPCC requirements or rules as applied to this specific facility.

Figure 1 is a map depicting all of the individual sites within the Cascade Creek Field that are included in this plan.

Attachment 1 contains site specific information forms and monthly inspection forms for all of the individual sites within the Cascade Creek Field that are included in this plan.

Attachment 2 is the worksheet which was used to calculate the secondary containment capacity at each individual site and to determine if that capacity is sufficient.

The Appendices contain contact information, inspection forms, event reports, certification checklists, emergency response procedures, and warning signs.

2.0 Facility Owner and Operator:

2.1 Facility Owner, Address, and Telephone:

OXY USAWTP LP

760 Horizon Drive #101

Grand Junction, CO 81506

970-263-3600

2.2 Facility Operator, Address, and Telephone:

OXY USAWTP LP

760 Horizon Drive #101

Grand Junction, CO 81506

970-263-3600

3.0 Facility Contact(s):

All facility contact names and phone numbers are located in Appendix A.

PLAN COPIES:

Copies of the plan have been numbered to assure that any revisions are included with each copy. Two copies are issued with original signatures:

1. Field Facility Office
2. John Ocana (Grand Junction Office)
3. Electronic Copy

No other copies will be considered complete or up to date.

4.0 Facility Description:

Note: The background information in this section is not required by 40 CFR part 112. However, it is recommended that facility background information be provided.

Cascade Creek Field (the Field) is located in Garfield County in western Colorado in Township 6 South, Range 97 West. The field produces natural gas and condensate. The typical production stream is separated at the wellhead into liquids and gas using a three-phase heated separator. Gas then flows via flowline to the Conn Creek Gas Plant for additional separation and compression. Liquids are collected by truck at each well site.

4.1 Facility Operations

In this section describe your facility's day-to-day operations, including hours of operation, personnel, and operational history. In your description include a discussion of the modes of transportation used for receiving products and raw materials (e.g., pipeline, railcar, tanker truck).

General operations of the Cascade Creek Field include several primary activities, including the drilling of natural gas wells, production of natural gas, storage of liquid, delivery of materials, transport of products, maintenance of equipment, storage and treatment of production water, and several other key activities.

Numerous storage containers are used throughout the Field. The main purpose of these containers is the storage of produced materials, byproducts, water, treatment chemicals, and other liquids.

There is a large amount of vehicle traffic to, from, and within the Field and a moderate amount of refueling of vehicles occurs on-site. Refueling and maintenance stations are treated in much the same manner as the other storage facilities on-site.

Several minor treatment, preparation, and production processes take place at the Field. These processes take place in one of the following on-site facilities: gas plant, central water facility, evaporation ponds, production pits.

Above ground piping and trucks are the primary modes transportation used for receiving and distributing products and raw materials at the Field. Pipes convey produced materials from the well pads to the gas plant. Trucks load and unload products and raw materials by hooking up to tank outlets and valves.

4.2 Facility Storage

In this section describe all types of oil products storage at our facility including oil products stored in aboveground storage tanks (ASTs), underground storage tanks (USTs), oil-filled electrical equipment (e.g., circuit breakers, transformers), spill tanks, oil/water separators, vapor recovery unit portable tanks, drum storage, and trucks which hold oil product and are parked on site.

The Cascade Creek Field is made up of numerous natural gas well pads, each of which containing bulk storage containers used for the storage of products and materials key to the production and operation of the wells. Materials stored on-site consist of natural gas condensate, methanol, diesel, gasoline, bulk oil, used oil and other chemicals. Storage containers with the potential to spill at sites within the Field include aboveground storage tanks (ASTs), elevated tanks, and 55-gallon drums.

Each natural gas well pad is home to, among other various tanks, at least one natural gas condensate tank. In addition each pad may have containers containing methanol, corrosion inhibitors, water, diesel fuel, and other liquids key to the operation or maintenance of the wells.

Further detail regarding the number, size, and contents of storage containers at each of the well pads included in this plan is included in the Bulk Storage Containers Tables (item 1) on the site specific forms. The identification and description of contents for each container listed in the tables is also noted on the site sketch diagrams included on the forms. These forms are included in Attachment 1.

4.3 Drainage Pathway and Distance to Navigable Waters

This section should describe the facility's proximity to bays, rivers, streams (perennial or intermittent), creeks, ditches, flood control channels, storm drains, and other waterways. Hydrological systems should be diagramed or described.

The well pads that make up the Cascade Creek Field are situated throughout a large area of varying terrain. Pads are located within one of three sub-fields: the Mesa, Logan Wash, and Valley fields. Each of these sub-fields has a separate drainage pattern based on the specific topography of each sub-field area. In some cases, pads are located within several feet of surface water bodies, and in other instances, flow distances exceed three quarters of a mile. Also, the flow paths range from flat terrain to extremely steep terrain. Flow patterns follow both natural and man-made drainage features. Each well pad is unique. Further detail regarding the drainage pathway and distance to navigable waters at each of the well pads included in this plan can be found in item 5 on the site specific forms. These forms are included in Attachment 1.

5.0 Physical Location and Diagram [112.7(a)(3)]:

112.7(a)(3) Describe in you Plan the physical layout of the facility and include a facility diagram, which must mark the location and contents of each container. The facility diagram must also include all transfer stations and connecting pipes.

Figure 1 presents a layout of the sites within the Cascade Creek Field. The sites included in this plan are highlighted. The physical layout of each of the sites covered in this plan is included in Attachment 1. Also included in Attachment 1 is a site by site listing of containers, container contents, potential spill sources and an assessment of the existing secondary containment.

6.0 Reporting Information and Procedures [112.7(a)(4)]:

112.7(a)(4) Provide response information and procedures in your Plan to enable a person reporting a discharge to relate information on the exact address or location and phone number of the facility; the date and time of the discharge; the type of material discharged; estimates of the total quantity discharged; estimates of the quantity discharged as described in 112.1(b); the source of the discharge; a description of all affected media; the cause of the discharge; any damages or injuring caused by the discharge; actions being used to stop, remove, and mitigate the effects of the discharge; whether an evacuation may be needed; and the names of individuals and/or organizations who have also been contacted.

Emergency personnel and equipment can be provided by the DeBeque Fire Authority (Call 911).

If there is a petroleum release, the first responding employee that discovers the spill reports the spill to the Facilities Engineer or to the OXY Grand Junction office. Names and phone numbers for the individuals are located in Appendix A.

The Facilities Engineer will immediately report to the site and, if necessary, utilize equipment stored on-site to assist with cleanup operations. In addition, cleanup assistance can be obtained directly from Old West (contact information included in Appendix E). The Facilities Engineer will also contact the appropriate agencies and report the release. If there is a petroleum release or suspected release of harmful quantity to the navigable waters of the U.S., it will be reported to the following regulatory agencies immediately:

- 1) Colorado State Inspector of Oils
Denver, CO
303-620-4029
- 2) National Response Center
Washington, DC
800-424-8802 (24 hour phone)
or
US Environmental Protection Agency
Region VIII Response Center
One Denver Place - Suite 500
999 18th Street
Denver, Colorado 80202-2405
303-293-1788 (24 hour phone)

When contacting these agencies, the following information must be provided:

- responsible company/person, including exact address and telephone number;
- name of person reporting the release;
- date and time of release;
- type of material discharged;
- estimate of the quantity released;
- waterway affected, including amount reaching water;
- source of the discharge;
- a description of all affected media;
- cause of release;
- damages or injuries caused by the discharge;
- action taken to stop, remove, and mitigate the effects of the release;
- whether an evacuation is needed;
- names and/or organizations who have also been or will be contacted.

7.0 Potential Spill Predictions, Volumes, Rates, and Control [112.7(b)]:

112.7(b) Where experience indicates a reasonable potential for equipment failure (such as tank overflow, rupture, or leakage), the plan should include a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each major type of failure.

The site specific forms for each of the well pads include summary tables which identify the quantities of each storage container (item 1) and the direction of flow (item 5). These forms can be found in Attachment 1.

Discharge prevention measures, including procedures for routine handling of products (loading, unloading, facility transfers, etc.), are described in the loading/unloading procedures in Appendix F.

Several scenarios have been evaluated to attempt to predict spill volumes and rates. In the first scenario a spill is predicted to occur from over filling of a tank due to the lack of a high level alarm. In this scenario, it is assumed that the loading truck would be pumping at approximately 20 gallons per minute. In a second scenario, a valve failure might result in a spill at a rate of 5 gallons per minute. The third scenario, involving a puncture or damage to the wall of a tank could potentially release at 250 gallons per minute. Again, each individual site will be addressed based on site specific conditions.

While bulk storage containers at each of the well pads are handled individually, in general, bulk oil storage containers are placed inside of secondary containment. The capacity of secondary containment areas for bulk oil storage containers is sized to contain the capacity of the largest container plus allowance for precipitation freeboard. This method of establishing sufficient secondary containment capacity has been the industry standard and approved by EPA for years and is mentioned in the Preamble to the Final SPCC Rule (Federal Register Volume 67, Number 137).

Piping or process equipment is either placed inside of secondary containment or operated in a manner to minimize the potential for leaks or spills. Drip pans are provided for equipment such as pumps, compressors, loading hoses, etc. that may have potential for drips and leaks during operation. Equipment integrity assurance procedures and equipment inspections are key parts of these prevention efforts.

The facility discharge discovery, response and cleanup capabilities are described in the discharge evaluation and event report and the emergency response procedures included in Appendices C and E, respectively. Housekeeping and early detection of leaks and spills are key parts of preventing oil from reaching waters of the U.S. Drainage ditches, process areas, and other areas where the potential of a spill entering a water source is most significant, are inspected on a regular basis. Prompt discovery, response and cleanup of oil will follow contingency plan procedures.

The facility has established methods of disposal for recovered materials in accordance with applicable legal requirements in the emergency response procedures in Appendix E.

In general, field personnel will coordinate the proper disposal of any waste materials as a result of a spill with the Operations Manager, with other assistance available as needed. Management and disposal of such materials will be conducted in accordance with applicable federal, state and local requirements. Personnel may also refer to the

emergency response procedures for guidance on management and disposal of certain materials.

8.0 Containment and/or Diversionary Structures [112.7(c)]:

112.7(c) Provide appropriate containment and/or diversionary structures or equipment to prevent discharged oil from reaching a navigable water course. The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not escape the containment system before cleanup occurs. At a minimum, you must use one of the following prevention systems or its equivalent:

(1) Onshore facilities:

8.1.1.1.1.1 Dikes, berms, or retaining walls sufficiently impervious to contain oil;

8.1.1.1.1.2 Curbing;

8.1.1.1.1.3 Culverting, gutters, or other drainage systems;

8.1.1.1.1.4 Weirs, booms, or other barriers;

8.1.1.1.1.5 Spill diversion ponds;

8.1.1.1.1.6 Retention ponds;

8.1.1.1.1.7 Sorbent materials.

8.1.1.1.2 (2) Offshore facilities:

8.1.1.1.3 (i) Curbing, drip pans;

8.1.1.1.4 (ii) Sumps and collection systems.

Containment and diversionary structures are provided where appropriate. While the layout of each well pad varies, in general, secondary containment structures have been provided in order to prevent discharged oil from reaching navigable water course. The containment systems have been designed and constructed so that discharge from any of the primary containment systems (i.e. tanks) will not escape the containment system before cleanup occurs. In addition to secondary containment structures, in some cases diversionary structures such as ditches have been constructed in order to divert discharge away from water courses in the immediate vicinity of a potential spill source.

The size and configuration of secondary containment structures at a particular well pad is based on the available space and the required containment of the tanks at that specific pad. Sketches and photographs of the secondary containment structures are included on the site specific forms contained in Attachment 1.

9.0 Inspections, Tests and Records [112.7(e)]:

112.7(e) Conduct inspections and tests required by this part in accordance with written procedures that you or the certifying engineer develop for the facility.

You must keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a

period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for the purposes of this paragraph.

Per 112.6(c)(4), each aboveground container will be tested/inspected for integrity on a regular schedule and whenever material repairs are made. The appropriate qualifications of personnel performing tests and inspections and the frequency and type of testing and inspections, which take into account container size, configuration, and design will be determine, in accordance with industry standards. The owner or operator will keep comparison records (records of inspections and tests kept under usual and customary business practices will suffice) and to inspect the containers' supports and foundations. The owner or operator also will conduct frequent inspection of the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas.

Each bulk oil container is visually inspected for deterioration and maintenance needs, including the foundation and support of each container located on or above the surface of the ground. All containers undergo:

1. Routine Operational Examination: Monthly or by exception visual examination and reporting of equipment malfunctions or leaks identified by operational personnel or technician (Appendix B).
2. External Condition Examination: Annual or by exception examination of container exterior using "Component Examination Log". Exceptions are reported to BU Inspection for additional inspection by a qualified inspector as necessary.

Pressure vessels undergo:

1. Inspection by qualified inspection personnel when initiated by exception from Operational or Condition Examinations.
2. Periodic external and/or internal inspections by qualified inspection personnel are scheduled on the basis of corrosion rate and remaining life in accordance with industry standards.

API Tanks undergo:

1. Inspection by qualified inspection personnel when initiated by exception from Operational or Condition Examinations.
2. Periodic external and/or internal inspections by qualified inspection personnel are scheduled on the basis of corrosion rate and remaining life in accordance with industry standards.

Brittle Fracture Consideration

In the event that a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service, the container is evaluated, in accordance with the relevant industry standard, for the risk of discharge or failure due to brittle fracture or other catastrophe.

Field drainage systems (i.e. field drainage ditches or road ditches) and oil traps, sumps, or skimmers are periodically inspected for accumulations of oil. The Facility conducts a periodic inspection of the following aboveground facility transfer operation appurtenances:

- Transfer operation piping and valves
- Valve glands and bodies
- Drip pans
- Pipe supports
- Wellhead components
- Bleeder and gauge valves

10.0 Personnel Training and Discharge Prevention [112.7(f)]:

10.1 Personnel Instructions

112.7(f)(1) At a minimum, train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and the contents of the SPCC Plan.

The Facility provides the following minimum training to oil-handling personnel prior to assuming new job responsibilities:

- Operation and maintenance of equipment to prevent oil discharges
 1. Oil discharge procedure protocols;
 2. Applicable oil spill prevention (State & Federal) laws, rules, and regulations;
 3. General facility operations; and,
 4. The contents of the facility SPCC Plan and applicable pollution control laws, rules, and regulations.
- The training program is further described as follows:
 1. Qualified and experienced personnel conduct on-the-job training of new and/or inexperienced employees.
 2. Formal training on operation and maintenance of oil field equipment is provided through company-sponsored schooling on an "as needed" basis.
 3. Pollution prevention and applicable regulatory requirements are brought to the attention of employees on a continuing basis in safety meetings, personal consultations, posters, literature distribution, etc.

10.2 Designated Person Accountable for Spill Prevention

112.7(f)(2) Designate a person at each applicable facility who is accountable for discharge prevention and who reports to facility management.

Ben Greinke is the designated person at the facility who is accountable for oil spill prevention. Ben Greinke may be contacted by telephone at (970) 985-0965.

10.3 Spill prevention briefings

112.7(f)(3) Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges as described in Sec. 112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures.

The Facility conducts prevention briefings for oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for the Facility. These briefings include discussion of potential discharges or component failures and recently developed precautionary measures. Documentation of Personnel, Training, and Discharge Prevention Briefing programs is maintained for a minimum period of three (3) years. Log forms can be obtained through the Production Office in Grand Junction, Colorado.

11.0 Site Security [112.7(g)]:

11.1 Fencing

112.7(g)(1) Fully fence each facility handling, processing, or storing oil, and lock and/or guard entrance gates when the facility is not in production or is unattended.

The facility deviates from security requirements in that fencing, lighting, and locked entrance gates are not provided as these are oil production facilities and provision of such security would be impractical.

Security is enforced at the Field. Guard shacks are located at all entrances to the Field. Workers and visitors must check in and out upon arrival and departure. No unauthorized entry is allowed.

Several individual sites have fencing installed around the tank batteries. Information regarding the fencing at each well pad can be found in item 9 on the site specific forms included in Attachment 1.

11.2 Flow Valves Locked

112.7(g)(2) Ensure that the master flow and drain valves and any other valves permitting direct outward flow of the container's contents to the surface have adequate security measures so that they remain in the closed position when in non-operating or non-standby status.

Information regarding the flow valves at each well pad can be found on the site specific forms included in Attachment 1.

11.3 Starter Controls Locked

112.7(g)(3) Lock the starter control on each oil pump in the ``off'' position and locate it at a site accessible only to authorized personnel when the pump is in a non-operating or non-standby status.

Information regarding the starter controls at each well pad can be found on the site specific forms included in Attachment 1.

11.4 Pipeline Loading/Unloading Connections Securely Capped

112.7(g)(4) Securely cap or blank-flange the loading/unloading connections of oil pipelines or facility piping when not in service or when in standby service for an extended time. This security practice also applies to piping that is emptied of liquid content either by draining or by inert gas pressure.

Information regarding the pipeline loading/unloading connections at each well pad can be found on the site specific forms included in Attachment 1. In addition, loading/unloading warning signs and procedures are included in Appendix F.

11.5 Lighting Adequate to Detect Spills

112.7(5) Provide facility lighting commensurate with the type and location of the facility that will assist in the:

- (i) Discovery of discharges occurring during hours of darkness, both by operating personnel, if present, and by non-operating personnel (the general public, local police, etc.); and*
- (ii) Prevention of discharges occurring through acts of vandalism.*

No security lighting is in place, as it has been determined not necessary based on the overall security operations of the entire field. While no permanent site security lighting is used at the well pads, portable lighting is available for use during activities performed at night as well as for emergency operations. Additionally, permanent lighting is provided at the guard shacks as well as at the Gas Plant and Water Facilities.

Information regarding the lighting at each well pad can be found in item 8 on the site specific forms included in Attachment 1.

12.0 Facility Tank Car and Truck Loading/Unloading Operations [112.7(h)]:

12.1 Secondary Containment for Vehicles

112.7(h)(1) Where loading/unloading area drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick

drainage system for tank car or tank truck loading and unloading areas. You must design any containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.

Condensate is unloaded from bulk storage tanks at each site using tank trucks. Secondary containment for tank trucks is not provided at the well pad sites based on several prohibitive and limiting site conditions.

First, explosion hazards exist due to the potential for trapping flammable vapors near an engine (an ignition source). Therefore, a secondary containment or enclosed area is not practical.

Second, very limited site sizes do not allow for the construction of additional containment specifically for the loading and unloading operations. Additionally, land uses require minimized surface impacts which preclude construction of major drainage systems at tank load out points.

In order to maintain control of the loading and unloading operations, standard practices require that all tank truck loading is attended continuously by the truck driver. In case of an incident, the truck driver can get to the controls to shut them off within 2 to 5 minutes. All loading and unloading trucks will be required to carry spill kits.

12.2 Warning or Barrier System for Vehicles

112.7(h)(2) Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle break interlock system in loading/unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.

The secondary containment structures (HESCO barrier or metal wall type) make up the barrier systems to prevent vehicle damage to the tanks at each pad. In cases where high traffic exists, metal or concrete bollards are installed. Refer to the field sketches contained in the site specific forms for detail on each well pad configuration (Attachment 1). Signs are posted as several of the individual well pads warning truck drivers to check all valves and connections to make sure they are securely tightened and closed before leaving the site. Example loading/unloading warning signs and procedures are included in Appendix F.

12.3 Vehicles Examined for Lowermost Drainage Outlets Before Leaving

112.7(h)(3) Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles, and if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

It is the responsibility of each individual vehicle driver to closely inspect the vehicle drains and outlets for any discharges, loose caps, or necessary adjustments or replacements in order to prevent discharge while in transit.

13.0 Repair, Alteration, Reconstruction or Change in Service [112.7(i)]:

112.7(i) If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.

As discussed previously in Section 9, per 112.6(c)(4), each aboveground container will be tested/inspected for integrity on a regular schedule and whenever material repairs are made. If the AST undergoes a repair, alteration, reconstruction, or change in service, it will be evaluated for the risk of discharge or failure due to brittle fracture or other catastrophe. Qualified contractors and personnel will perform all repair, alteration, and/or reconstruction activities according to accepted industry practices and regulations.

14.0 Facility Drainage [112.8(b)]:

14.1 Drainage Control

112.8(b)(1) Restrain drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged.

Tank battery and separation and treating area dike/containment drains are not present at the sites. Should drainage from dike/containment areas be necessary, it is performed using vacuum trucks.

If oil is detected in containment areas or in field drainage systems, the removal procedures and the requirements for disposition of the recovered product are included in Appendix C.

Drainage from undiked areas is not confined in a catchment basin or holding pond. There are no bulk oil storage containers not within secondary containment present at the facility.

14.2 Valves used on Diked Area Storage

112.8(b)(2) Use valves of manual, open-and-closed design, for the drainage of diked areas. You may not use flapper-type drain valves to drain diked areas. If your facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, you must inspect and may drain uncontaminated retained stormwater, as provided in paragraphs (c)(3)(ii), (iii), and (iv) of this section.

This section is not applicable, as no diked area drains or valves are used.

14.3 Plant Drainage Systems from Undiked Areas

112.8(b)(3) Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.

Facility drainage systems have been designed to handle stormwater events only. These drainage systems consist of ditches, culverts, and swales.

14.4 Final Discharge of Drainage

112.8(b)(4) If facility drainage is not engineered as in paragraph (b)(3) of this section, equip the final discharge of all ditches inside the facility with a diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility.

As discussed in the previous section, overall facility drainage is designed to handle only stormwater. All potential discharges will be contained by secondary containment structures designed with sufficient capacity to contain a discharge until clean up occurs.

14.5 Facility Drainage Systems and Equipment

112.7(e)(1) (5) Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two "lift" pumps and permanently install at least one of the pumps. Whatever techniques you use, you must engineer facility drainage systems to prevent a discharge as described in Sec. 112.1(b) in case there is an equipment failure or human error at the facility.

This section is not applicable, as no equipment is necessary in the facility drainage systems.

15.0 Bulk Storage Tanks/Secondary Containment [112.8(c)]:

15.1 Tank Compatibility with its Contents

112.8(c)(1) Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature.

Information regarding tank compatibility with contents can be found in the site specific forms included as Attachment 1. In general, the material and construction of bulk storage containers are compatible with the material stored and conditions of storage such as pressure and temperature.

15.2 Secondary Containment

112.8(c)(2) Construct all bulk storage container installations so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a facility catchment basin or holding pond.

All bulk storage container installations are constructed so that a secondary means of containment is provided for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. The secondary containment areas are sufficiently impervious to contain discharged oil. Specific information including the size and the configuration of the secondary containment structures at each well pad can be found in the site specific forms included in Attachment 1. Calculations conducted in order to determine whether the secondary containment structures were of sufficient size are included in Attachment 2

15.3 Diked Area Inspection and Drainage of Rainwater

112.8(c)(3) Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:

- (i) Normally keep the bypass valve sealed closed.*
- (ii) Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in Sec. 112.1(b).*
- (iii) Open the bypass valve and reseal it following drainage under responsible supervision; and*
- (iv) Keep adequate records of such events, for example, any records required under permits issued in accordance with Secs. 122.41(j)(2) and 122.41(m)(3) of this chapter.*

Most stormwater which enters secondary containment areas that surround bulk storage containers is removed by natural infiltration and evaporation. Should drainage from dike/containment areas be necessary, it is performed using vacuum trucks.

15.4 Corrosion Protection of Buried Metallic Storage Tanks

112.8(c)(4) Protect any completely buried metallic storage tank installed on or after January 10, 1974 from corrosion by coatings or cathodic protection compatible with local soil conditions. You must regularly leak test such completely buried metallic storage tanks.

This section is not applicable, as there are no buried metallic storage tanks on-site.

15.5 Corrosion Protection of Partially Buried Metallic Tanks

112.8(c)(5) Not use partially buried or bunkered metallic tanks for the storage of oil, unless you protect the buried section of the tank from corrosion. You must protect partially buried and bunkered tanks from corrosion by coatings or cathodic protection compatible with local soil conditions.

There are several partially buried metallic tanks on-site. Information regarding the corrosion protection provided can be found on the individual site specific forms included in Attachment 1.

15.6 Aboveground Tank Periodic Integrity Testing

112.8(c)(6) (6) Test each aboveground container for integrity on a regular schedule, and whenever you make material repairs. The frequency of and type of testing must take into account container size and design (such as floating roof, skid-mounted, elevated, or partially buried). You must combine visual inspection with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or another system of non-destructive shell testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph.

Aboveground storage tanks, containment systems, and associated equipment are inspected on a monthly basis. During inspections, the above ground storage tanks, containment systems, surrounding surface areas, piping, valves, and all other applicable equipment are inspected for signs of deterioration and leaks. A formal visual external inspection will be performed every five years (API 653) or at the quarter corrosion-rate of the shell, whichever is less. Periodic internal inspections will be made in accordance with API 653 as well. Pressurized piping and leak detectors associated with the ASTs are tested annually in accordance with state regulations.

15.7 Corrosion Protection of Buried Metallic Storage Tanks

112 (7) Control of leakage through internal heating coils:

112.8(c)(7)(7) Control leakage through defective internal heating coils by monitoring the steam return and exhaust lines for contamination from internal

heating coils that discharge into an open watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system.

This section is not applicable as no internal heating coils are used.

15.8 Tank Installation Fail-Safe Engineered

112.8(c)(8) (8) Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:

- (i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.*
- (ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.*
- (iii) Direct audible or code signal communication between the container gauger and the pumping station.*
- (iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges. If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.*
- (v) You must regularly test liquid level sensing devices to ensure proper operation.*

The ASTs at the facility are constructed of welded steel in accordance with UL 2085, NFPA 20, and API standards, are grounded, and are compatible with the fuel products that they hold.

High liquid level alarms are installed on several of the tanks at the facility. It is the intent of the owner to install high liquid level alarms on newly installed tanks. Not all tanks are equipped with high liquid level alarms; however, in all cases, qualified personnel are present during filling of bulk storage containers.

Information regarding the presence of level alarm devices and the inspections and testing of these alarms is included on the monthly inspection forms included in Appendix B.

15.9 Observation of Disposal Facilities for Effluent Discharge

112.8(c)(9) Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge to navigable waters.

This section is not applicable, as no effluent treatment facilities are included in this Plan.

15.10 Visible Oil Leak Corrections from Tank Seams and Gaskets

112.8(c)(10) Promptly correct visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves,

rivets, and bolts. You must promptly remove any accumulations of oil in diked areas.

Any oil leaks identified through routine work activities or site inspections are promptly corrected by facility maintenance personnel. Minor spills due to leaks are cleaned up with absorbent material. A qualified spill contractor shall be used for larger spills and spills to navigable waters.

15.11 Appropriate Position of Mobile or Portable Oil Storage Tanks

112.8(c)(11) (11) Position or locate mobile or portable oil storage containers to prevent a discharge as described in Sec. 112.1(b). You must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

All mobile or portable oil storage tanks are placed in a means of secondary containment. Refer to the site specific forms in Attachment 1 for more information regarding the quantity, size, contents, location, and provided secondary containment for mobile or portable tanks.

16.0 Facility Transfer Operations [112.8(d)]:

16.1 Buried Piping Installation Protection and Examination

112.8(d)(1) Provide buried piping that is installed or replaced on or after August 16, 2002, with a protective wrapping and coating. You must also cathodically protect such buried piping installations or otherwise satisfy the corrosion protection standards for piping in part 280 of this chapter or a State program approved under part 281 of this chapter. If a section of buried line is exposed for any reason, you must carefully inspect it for deterioration. If you find corrosion damage, you must undertake additional examination and corrective action as indicated by the magnitude of the damage.

For information on specific well pad buried piping installation protection and examination refer to the site specific forms included in Attachment 1.

The following are provided for the corrosion protection of flowlines:

1. Protective coatings
2. Cathodic protection (buried pipe)
3. Corrosion inhibitor is used to protect against internal corrosion when determined by testing or observation to be necessary.

The following mechanical devices or controls are used for loss prevention or mitigation:

1. Check valves
2. High / Low pressure control

3. Controlled block valves

The following flowline inspection / monitoring procedures are used:

1. Periodic leak surveillance and inspection of buried flowlines when uncovered
2. Periodic external inspection for aboveground
3. Pipe wall thickness measurements based on remaining life (aboveground metallic flowlines - performed by qualified inspectors)
4. Selected bellhole examinations (buried flowlines)
5. Cathodic protection monitoring (buried flowlines)
6. Inhibitor performance monitoring

16.2 Not-In-Service and Standby Service Terminal Connections

112.8(d)(2) Cap or blank-flange the terminal connection at the transfer point and mark it as to origin when piping is not in service or is in standby service for an extended time.

All not-in-service and standby service terminal connections are capped or blank-flanged at the transfer point and are marked as to origin.

16.3 Pipe Supports Design

112.8(d)(3) Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.

All pipe supports are properly designed to minimize abrasion and corrosion and allow for expansion and contraction.

16.4 Aboveground Valve and Pipeline Examination

112.8(d)(4) (4) Regularly inspect all aboveground valves, piping, and appurtenances. During the inspection you must assess the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. You must also conduct integrity and leak testing of buried piping at the time of installation, modification, construction, relocation, or replacement.

All aboveground valves and pipelines are scheduled for regular inspection to assess the general condition of items such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. Integrity and leak testing of buried piping is also performed during installation, modification, construction, relocation, or replacement.

16.5 Aboveground Piping Protection from Vehicular Traffic

112.8(d)(5) 5) Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.

Where available space allows, aboveground piping is installed out of the way of vehicular traffic. In cases where aboveground piping is situated in high traffic areas, bollards and/or warning signs will be installed.

17.0 Impracticability [112.7(d)]:

112.7(d) If the containment and/or diversionary structures or equipment required by the rule to prevent a discharge can be implemented, they are referred to by the rule as practicable and are described in the Plan.

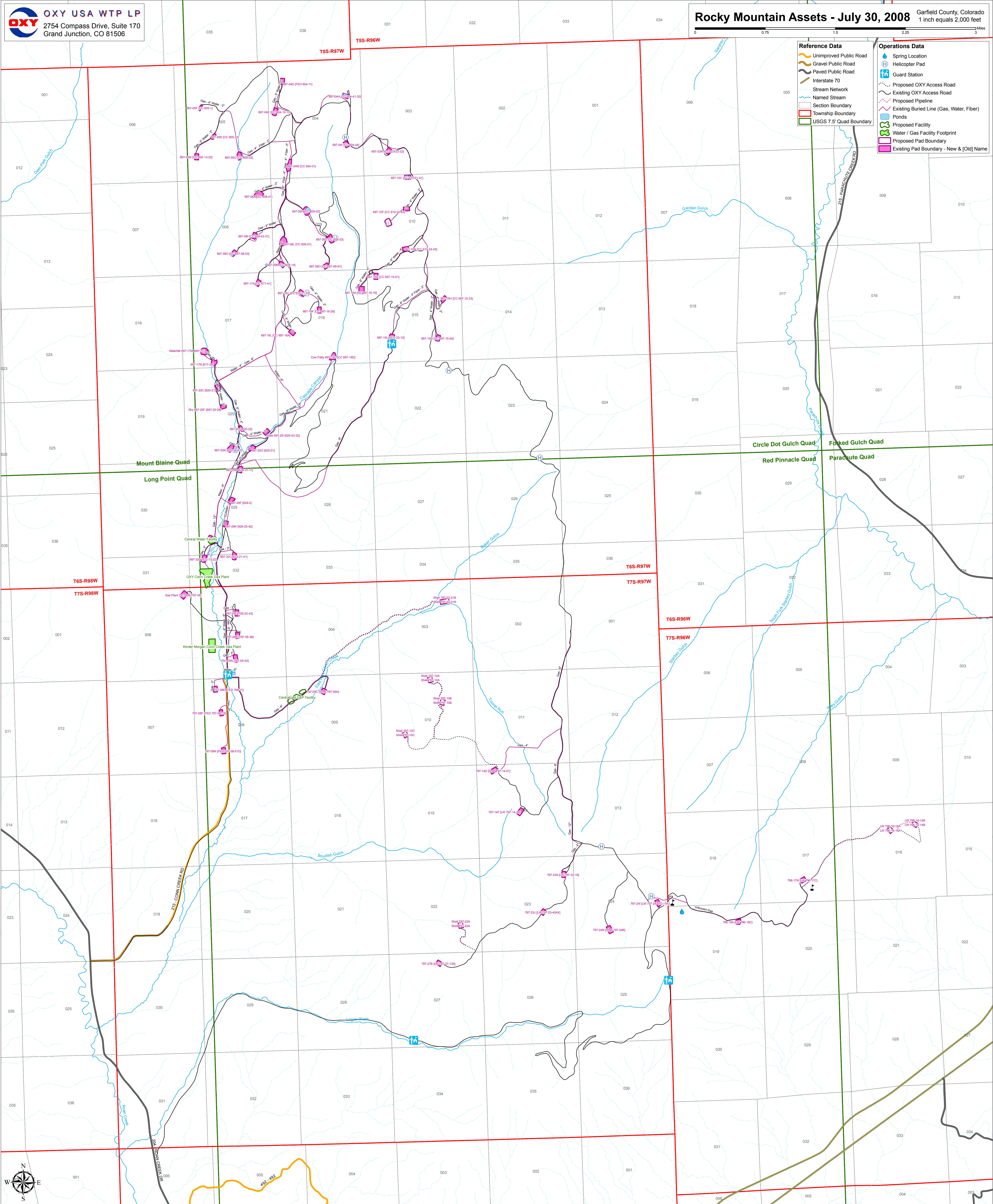
If not practicable, the following provides a description of the impracticability.

As discussed in Section 12.1, secondary containment around loading/unloading areas can create a potential explosion hazard by trapping flammable vapors near an engine (an ignition source) that often must remain running during the loading operations to power the transfer pump. Because the tank truck should not be parked or left standing near a building or in a depressed or enclosed area that will trap vapors or collect liquids which are ignitable, it is not practicable to have secondary containment for the loading/unloading areas.

Figure 1

Sites within Cascade Creek Field





Attachment 1

Site Specific Information Forms

603-23-32

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3	400 bbl	natural gas condensate
4 – elevated	500 gallon	methanol
5 – ground level	48 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums? ☒ Yes ☐ No

Quantity: 3 drums, contents unknown

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 3 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the SW. The nearest surface water body is > ¼ mile from the pad.

6. Physical Location: SESW Section 3, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

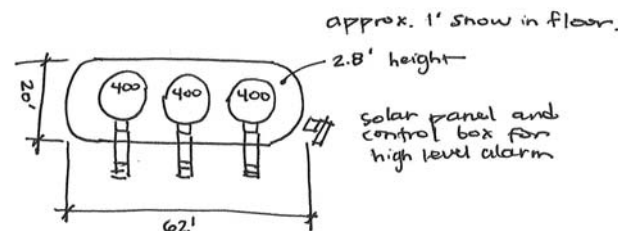
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ NA



Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
62.0	20.0	2.8	NA	400	400	6	400	6	NA	NA	411.3860	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol, NFPA label) which is contained by 8' diameter stock trough – dry; 4'x4'x3' tank, contents unknown;

three 55-gal drums, contents unknown, contained by two 6'x2' x2' stock troughs – dry. A fence surrounds these additional tanks; however, no additional containment is provided.

604-01

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3	400 bbl	natural gas condensate
4 – elevated	500 gallon	methanol
5 – elevated	500 gallon	methanol
6 – elevated	500 gallon	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 2 sets of tank access stairs exit outside containment; 1 set of containment access stairs over west wall of containment.

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the SW toward the access road below the pad. The distance to the nearest surface water body is > 1/4 mile from the pad.

6. Physical Location: SWSW Section 4, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

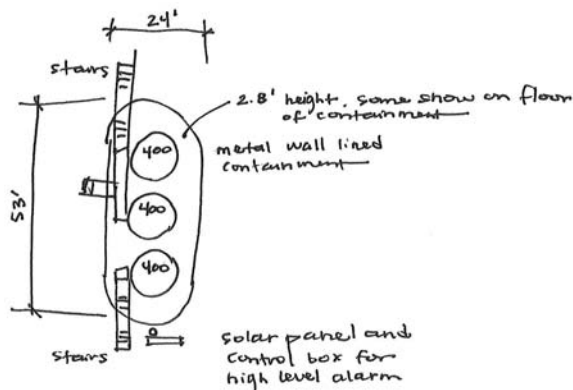
11. Buried piping onsite? ☐ Yes ☒ No

If Yes, cathodically protected and wrapped? ☐ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
53.0	24.0	2.8	NA	400	400	6	400	6	NA	NA	408.7655	yes

15. Additional Notes: Additional tanks on pad include the following: three 500-gal elevated steel tanks (two labeled methanol, the third not labeled) which are contained by 8' diameter stock troughs – dry.

604-11

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3 – elevated	500 gallon	methanol
4 – ground level	32 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph taken during
November 17, 2008 inspection

2. 55 Gallon Drums? ☒ Yes ☐ No

Quantity: 2 – triethylene glycol

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 set of tank access stairs exits to the north and outside of the containment wall and one set of containment access stairs over east wall, as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the southeast and greater than ¼ mile to the nearest surface water body.

6. Physical Location: NENE Section 4, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

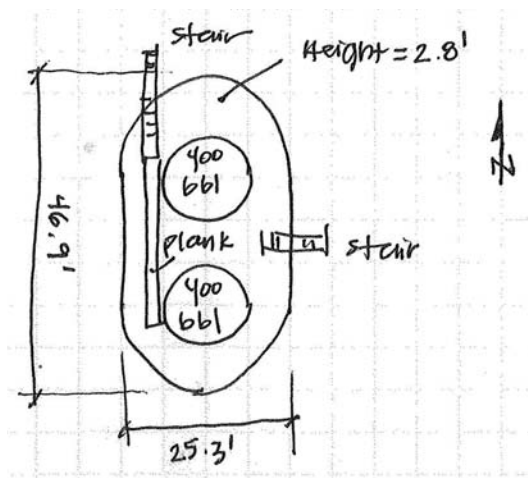
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 11/17/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
46.9	25.3	2.8	NA	400	400	6	NA	NA	NA	NA	420.1205	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol and with NFPA) which is contained by an 8' diameter stock trough – dry; 4'x4'x2' tank, contents unknown, has torn NFPA label; two 55-gal drums contained in a 6'x2'x2' stock trough – dry. The additional tanks and components are located within earth berm containment approximately 40'x40'x6".

604-44

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3 – elevated	500 gallon	methanol
4 – ground level	64 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph taken during
November 17, 2008 inspection

2. 55 Gallon Drums? ☒ Yes ☐ No
Quantity: 2 containing “METALGUARD G5”

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 set of tank access stairs exits to the north and outside of containment walls and 1 set of containment access stairs over east wall, as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the north. The nearest surface water body is > 1/4 mile from the pad.

6. Physical Location: NESE Section 4, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

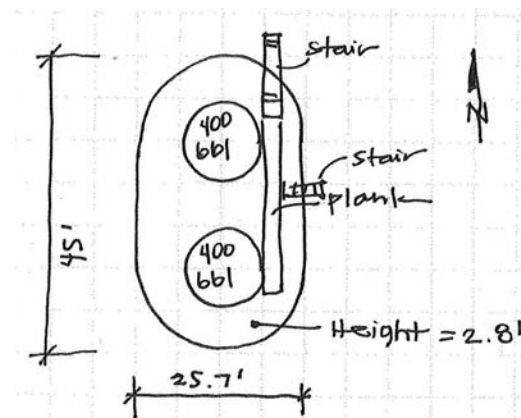
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 11/17/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
45.0	25.7	2.8	NA	400	400	6	NA	NA	NA	NA	404.4751	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol and with NFPA label) which is contained by an 8' diameter stock trough – dry; 4'x4'x4' tank, contents unknown; two 55-gal drums, contents – metal guard G5, contained by a 5'x2'x2' stock trough – dry. The additional tanks are all contained within a 30'x30'x1' earth berm and fence.

605-01

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	300 bbl	natural gas condensate
2	300 bbl	natural gas condensate
3	300 bbl	natural gas condensate
4	300 bbl	natural gas condensate
5 – elevated	500 gallon	methanol
6 – elevated	500 gallon	methanol
7 – ground level	300 gallon	unknown
8 – temporary	unknown (frac tank)	unknown, assumed frac water
Underground Storage Tanks	Volume	Contents
None		



Photograph taken during
November 17, 2008 inspection

2. 55 Gallon Drums? ☒ Yes ☐ No

Quantity: 2 drums, contents unknown

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 2 sets of tank access stairs exit to the west and outside of containment walls, as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the west. The nearest surface water body is > 1/2 mile from the pad.

6. Physical Location: SWNW Section 5, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

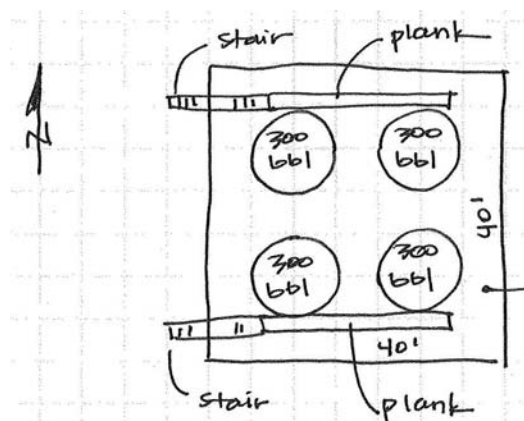
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 11/17/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
40.0	40.0	2.9	NA	300	300	6	300	6	300	6	580	yes

15. Additional Notes: Additional tanks on pad include the following: two 500-gal elevated steel tanks (labeled methanol with NFPA label) which are contained by 8' diameter stock troughs – dry; 300 gallon plastic tank, contents unknown; two 55-gallon drums, contents unknown, contained by 5'x2'x2' stock trough – dry. These additional tanks are all contained within a 40' x 40' earth berm and fence.

605-13-22**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3 – elevated	500 gallon	methanol
4 – elevated	500 gallon	methanol (not in use)
5 – ground level	64 cf	unknown
6 – ground level	64 cf	unknown (not in use)
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums: ☐ Yes ☒ No

Quantity: _____

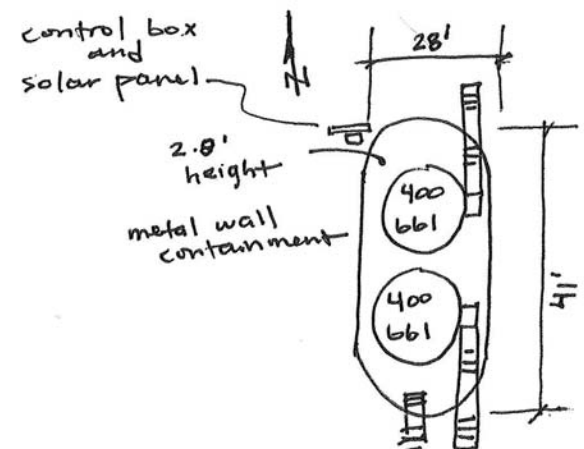
3. NFPA Label: ☒ Yes ☐ No4. Stairs in containment: ☐ Yes ☒ No

Where: two sets of tank access stairs exit outside of containment
and one set of containment access stairs exits over south wall.

5. Drainage pathway and Distance to Navigable Waters: Spill
direction is to the southwest toward the access road. The distance to
the nearest water body is > 1/4 mile. A dry drainage exists
approximately 250' east of the pad (running north to south).

6. Physical Location: SWSW Section 5, T 6 S, R 97 W.7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

Sketch of facility 01/28/09

14. Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
44.0	28.0	2.8	NA	400	400	6	NA	NA	NA	NA	426.7272	yes

15. Additional Notes: Additional tanks on pad include the following: two 500-gal elevated steel tanks (labeled methanol) which are contained by 8' diameter stock troughs and two 4'x4'x4' (one partially buried), contents unknown, no secondary containment. Note: tanks at SE corner of site do not appear to be in use.

605-23**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3 - elevated	500 gal	methanol
4 - ¾ buried	64 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



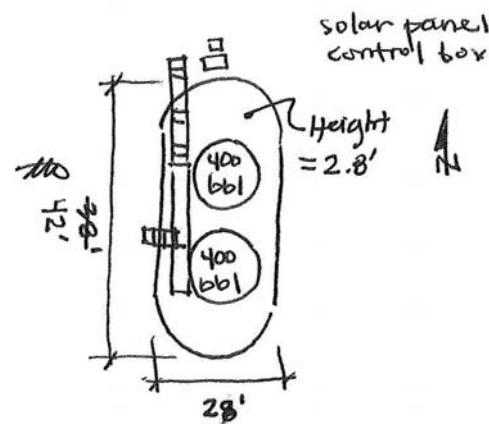
Photograph 01/28/09

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No4. Stairs in containment? ☐ Yes ☒ NoWhere: 1 outside as shown below5. Drainage pathway and Distance to Navigable Waters: The distance to the nearest water body is > ¼ mile.6. Physical Location: NESW Section 5, T 6 S, R 97 W.7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
42.0	28.0	2.8	NA	400	400	6	NA	NA	NA	NA	401.2934	yes

15. Additional Notes: Additional tanks on the pad include a 500 gallon elevated methanol tank contained within a 8' diameter stock trough and a 4' cube tank with unknown contents.

608-43-31

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3	400 bbl	natural gas condensate
4	~125 bbl	Unknown
5 – elevated	500 gallon	Methanol
6 – ground level	32 cf	Unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph taken during
November 19, 2008 inspection

2. 55 Gallon Drums? ☒ Yes ☐ No

Quantity: 2 drums containing "METALGUARD"

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 tank access stair exits to the east and outside and 1 containment area access stair over north containment wall, as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the northwest. The nearest surface water body is > ¼ mile from the pad.

6. Physical Location: NESE Section 8, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: wire ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

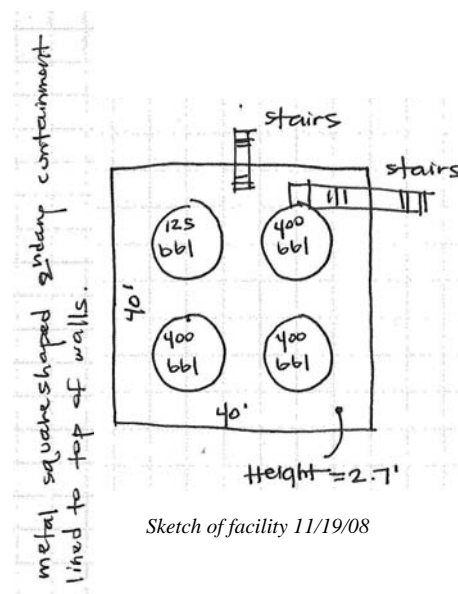
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 11/19/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
40.0	40.0	2.7	NA	400	400	6	400	6	125	6	535.0195	yes

15. Additional Notes: Additional tanks on pad include the following: two 55-gallon drums labeled “metal guard” contained in a 6’x2’x2’ stock trough; one 500-gal elevated steel tank (labeled methanol) which is contained by an 8’ diameter stock trough – dry; 4’x2’x2’ tank, contents unknown but does have NFPA label. These additional tanks are all contained within a 40’x30’x1’ earth berm located at the northeast corner of the pad.

609-01**1. Bulk Storage Containers:**

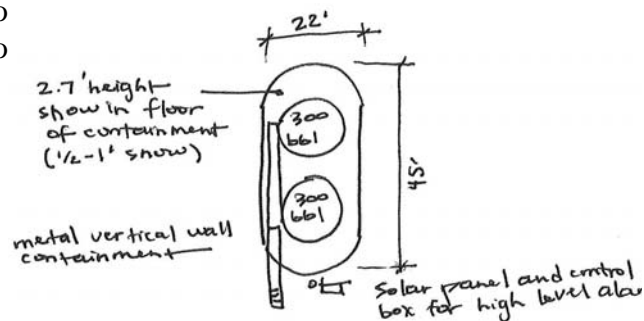
Tank ID or Name	Volume	Contents
1	300 bbl	natural gas condensate
2	300 bbl	natural gas condensate
3 – elevated	500 gallon	methanol
4 – elevated	500 gallon	methanol
5 – elevated	500 gallon	methanol
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums? ☐ Yes ☒ No Quantity: _____3. NFPA Label? ☐ Yes ☒ No4. Stairs in containment? ☐ Yes ☐ NoWhere: one set of tank access stairs exits outside of south wall of containment5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the southeast. The nearest surface drainage or water body is > ¼ mile from the pad.6. Physical Location: NWSW Section 9, T 6 S, R 97 W7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
45.0	22.0	2.7	NA	300	300	6	NA	NA	NA	NA	332.2887	yes

15. Additional Notes: Additional tanks on pad include the following: three 500-gal elevated steel tanks (labeled methanol, with NFPA labels) which are contained by 8' diameter stock troughs – dry. These additional tanks are not located within any secondary containment.

609-02

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3 – ground level	400 gallon	unknown
4 – elevated	500 gallon	methanol
5 – elevated	500 gallon	methanol
6 – elevated	500 gallon	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums? ☒ Yes ☐ No

Quantity: 6 drums, contents unknown

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the north. The nearest surface water body is > 1/4 mile from the pad.

6. Physical Location: SENW Section 9, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

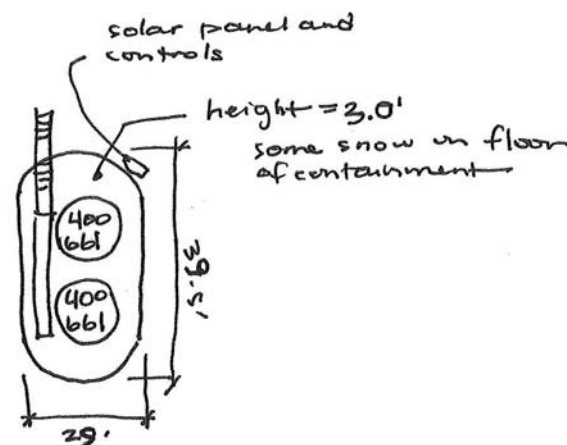
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
39.5	29.0	3.0	NA	400	400	6	NA	NA	NA	NA	412.2323	yes

15. Additional Notes: Additional tanks on pad include the following: two 55-gal plastic drums contained in a 5'x2'x2' oval-shaped stock trough; four 55-gallon drums with unknown contents situated at SW corner of pad;

two 500-gal elevated steel tanks containing methanol, which are contained by 8' diameter stock troughs – dry; one 500-gal tank, contents unknown; one 400-gal polyolefin agri-tank with unknown contents. These additional tanks are contained within an earth berm.

609-14

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	300 bbl	natural gas condensate
2 – elevated	500 gallon	methanol
3 – ground level	32 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: 2 drums, contents unknown

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 outside as shown below



5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the southwest. The nearest surface water body is a pond approximately 1/2 mile south of the pad.

6. Physical Location: SWSW Section 9, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☒ Yes – Type: wire ☐ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

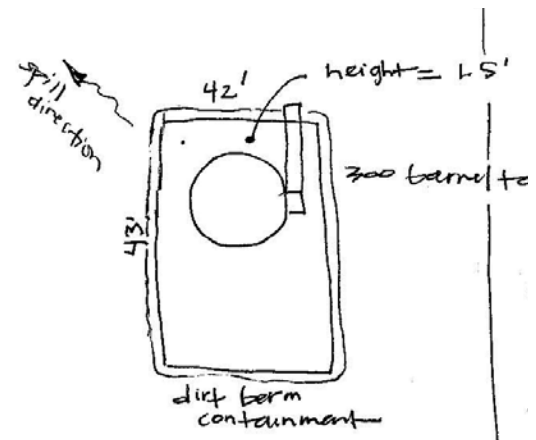
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 6/25/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
43.0	42.0	1.5	1:1	300	NA	NA	NA	NA	NA	NA	368.8163	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol) which is contained by an 8' diameter stock trough – dry; 4'x4'x2' tank, contents unknown but has

NFPA label; two 55-gal drums contained in 6'x2'x2' stock trough. These additional tanks are contained within an approximately 45'x30'x1' earth berm located north of the first containment area.

610-22-43

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3 – elevated	500 gallon	methanol
4 – ground level	48 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☐ Yes ☒ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the southwest. The nearest surface water body is > ¼ mile from the pad.

6. Physical Location: SENW Section 10, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

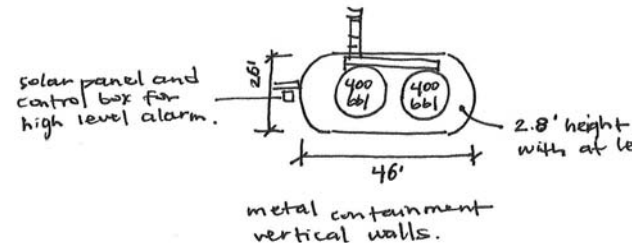
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
46.0	26.0	2.8	NA	400	400	6	NA	NA	NA	NA	420.9033	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol and with NFPA label) which is contained by an 8' diameter stock trough – 1" standing water;

4'x4'x3' tank, contents unknown; 6'x2'x2' stock trough – 2" standing liquid. An earth berm and fence surround these additional tanks (approximately 30'x30'x6").

610-24-43**1. Bulk Storage Containers:**

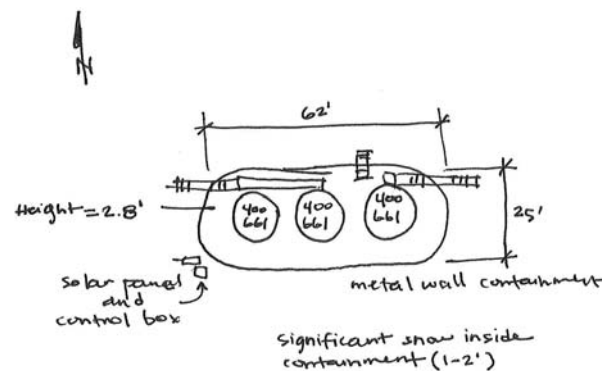
Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3	400 bbl	natural gas condensate
4 – elevated	500 gallon	methanol
5 – ground level	32 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums? ☒ Yes ☐ NoQuantity: 1 drum, contents unknown**3. NFPA Label?** ☒ Yes ☐ No**4. Stairs in containment?** ☐ Yes ☒ NoWhere: two sets of tank access stairs exit outside containment; one set of containment access stairs over north wall of containment, as shown below**5. Drainage pathway and Distance to Navigable Waters:** Spill direction is to the southwest. A spill would most likely pool in the area directly south of the containment area. Breaching of the pad surface is unlikely. The nearest surface water body is > ¼ mile from the pad.**6. Physical Location:** SESW Section 10, T 6 S, R 97 W**7. Spill-kit onsite?** ☐ Yes – Where: _____ ☒ No**8. Exterior Lighting?** ☐ Yes – Type: _____ ☒ No**9. Site Fenced?** ☐ Yes – Type: _____ ☒ No**10. All Tanks Compatible with contents?** ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No**12. Above ground piping onsite?** ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No**13. Corrosion protection for buried tanks?** ☐ Yes ☒ N/A

Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
62.0	25.0	2.8	NA	400	400	6	400	6	NA	NA	530.2501	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol and with NFPA label) which is contained by an 8' diameter stock trough – dry; 4'x4'x2' tank, contents unknown; one 55-gal drum on its side, contents unknown, contained by a 6'x2'x2' stock trough – dry. A fence surrounds these additional tanks; however, no other secondary containment is provided.

616-21-32

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3	400 bbl	natural gas condensate
4 – elevated	500 gallon	methanol
5 – ground level	32 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: two sets of tank access stairs as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the southeast and southwest. The nearest surface water body is > 1/2 mile from the pad.

6. Physical Location: NENW Section 16, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

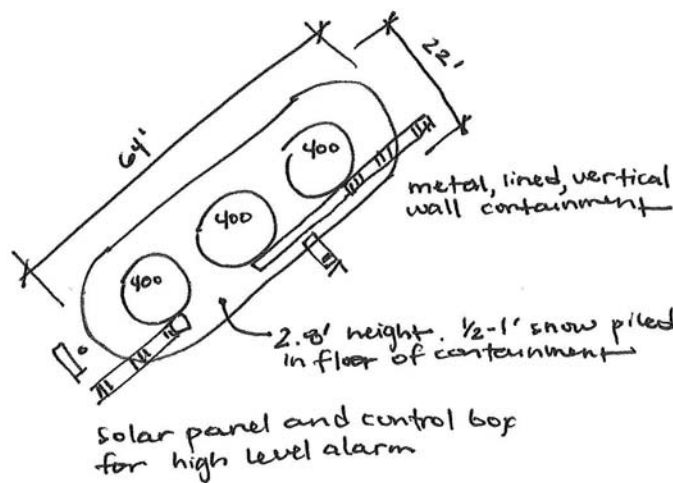
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
64.0	22.0	2.8	NA	400	400	6	400	6	NA	NA	479.5001	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol and with NFPA label) which is contained by an 8' diameter stock trough – dry, located outside any secondary containment berms; 4'x4'x2' tank, contents unknown; two 55-gal drums (contents: triethylene glycol) which are contained in a 5'x2'x2' stock trough – 2" standing water with oily sheen. The 4'x2'x2' tank and the two 55-gal drums are located within a fenced area.

617-24

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	145 gallon	Scortron GR-164 (Plastic containment)
Frac trucks (17)	Unknown	Fresh water (Not in containment)
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☒ Yes ☐ No

Quantity: 3.

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: _____

5. Drainage pathway and Distance to Navigable Waters: Flow would be south off pad through stormwater check dams along road approximately 500' before contacting navigable waters.

6. Physical Location: SESW, Section 17, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

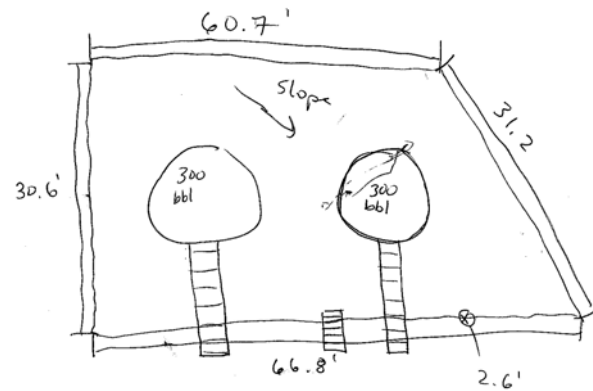
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 5/2/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
60.7	30.6	2.0	1:1	300	300	6	NA	NA	NA	NA	475.50	yes

15. Additional Notes: Hesco barriers used for containment, good material for fill, raised on portion of wall 2.6' above floor but only 2.0' on rest of containment therefore used 2.0' = height. 60.7' and 30.6' used as width and length for conservative estimate of containment capacity.

617-41

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3	400 bbl	natural gas condensate
4	400 bbl	natural gas condensate
5 – elevated	500 gallon	methanol
6 – ground level	48 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☒ Yes ☐ No
Quantity: 2 drums – metal guard G5 “oxidizer”

3. NFPA Label? ☐ Yes ☒ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 set of tank access stairs exits to the south and outside containment walls and 1 set of containment access stairs over south wall, as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the north. The nearest surface water body is > ¼ mile from the pad.

6. Physical Location: NENE Section 17, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ No

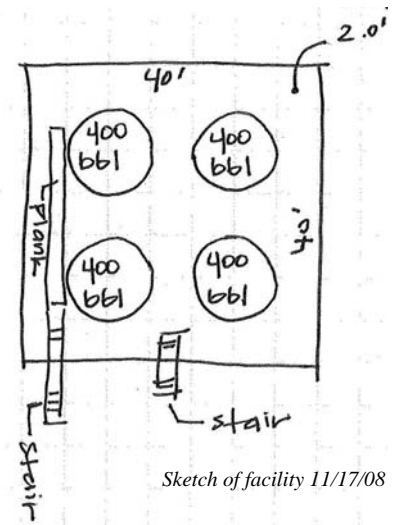
If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

Photograph taken during
November 17, 2008 inspection



Sketch of facility 11/17/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
40.0	40.0	2.3	NA	400	400	6	400	6	400	6	445	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol) which is contained by an 8' diameter stock trough – dry; 4'x4'x3' tank, contents unknown but has NFPA label; two 55-gal drums contained in a 6'x2'x2' stock trough – 3" standing water. These additional tanks are contained within an earth berm located southwest of the first containment area.

620-01**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	400	Natural gas condensate
Tank 2	400	Natural gas condensate
Tank 3	500 gallon	Methanol (contained in 8' diam. Stock tank)
Tank 4	145 gallon	Scortron GR-164 (contained in plastic tank)
Tank 5	Unknown	Unknown (tank is self contained)
Underground Storage Tanks	Volume	Contents
None		



Photograph taken during
November 17, 2008 inspection

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 2 sets of stairs exit outside of containment on west side of containment wall

5. Drainage pathway and Distance to Navigable Waters: Flow would be to the southwest, across the road and ultimately into Conn Creek approximately 120' away.

6. Physical Location: SWSE, Section 20, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

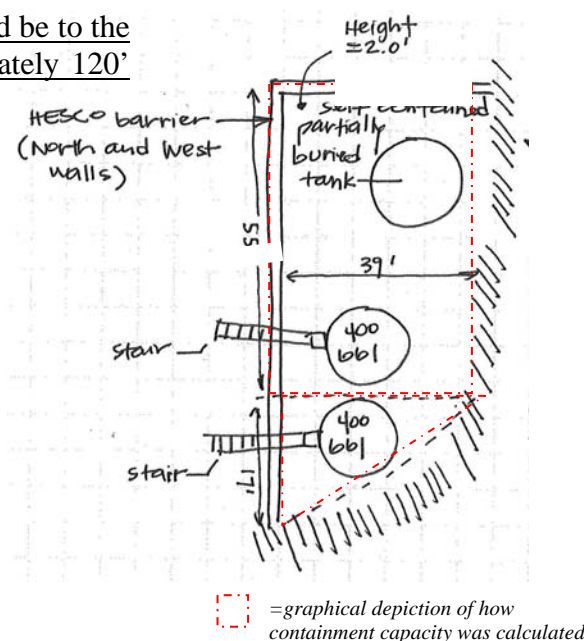
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☐ Yes ☒ No

If Yes, piping supports adequate? ☐ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 11/17/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
See Sketch			NA	400	400	6	Unk	5.75	NA	NA	700	yes

15. Additional Notes: Plastic tank containment for 145 gallon Scortron GR-164 is 4' * 6' * 1.2'. One partially buried tank was identified inside the containment area. The self contained tank inside the containment area is partially buried (approx. ¼). The exact volume of this tank is unknown, however, it appears to have a capacity of at least 100 bbl. The contents of this tanks is also unknown.

620-21AD**1. Bulk Storage Containers:**

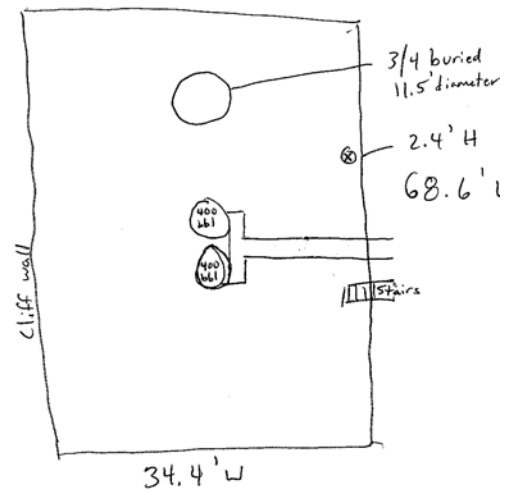
Tank ID or Name	Volume	Contents
Tank 1	400 bbl	Natural gas condensate
Tank 2	400 bbl	Natural gas condensate
Tank 3	Unknown	¾ buried 11.5 diam. Tank in containment
Tank 4	145 gallon	Scortron GR-164 (Plastic containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ NoQuantity: 26 unknown contents3. NFPA Label? ☒ Yes ☐ No4. Stairs in containment? ☒ Yes ☐ NoWhere: 1 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be out of SW corner of containment and flow northeast down pad to creek approximately 180' away.

6. Physical Location: NENW, Section 20, T6S, R 97W7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☒ Yes ☐ N/A

Sketch of facility 5/2/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
68.6	34.4	2.4	1:1	400	400	6	400	5.75	NA	NA	708.53	yes

15. Additional Notes: Hesco barriers used for containment, good fill material – NO CONTAINMENT PROVIDED FOR 55 GALLON DRUMS (Contents = unknown, Weatherford CorrFoam, emergency response kit, used filters/rags, etc.)

620-24-43**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	145 gallon	Scortron GR-164 (plastic containment)
Frac tanks (3)	Unknown	Unknown (not in containment)
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☒ Yes ☐ No

Where: 1 outside, 1 inside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be north off pad and down v-ditch along road approximately 300' onto edge of lined pond. Enough flow would cross road and enter creek approximately 600' down-gradient (shown above).

6. Physical Location: SESW, Section 20, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

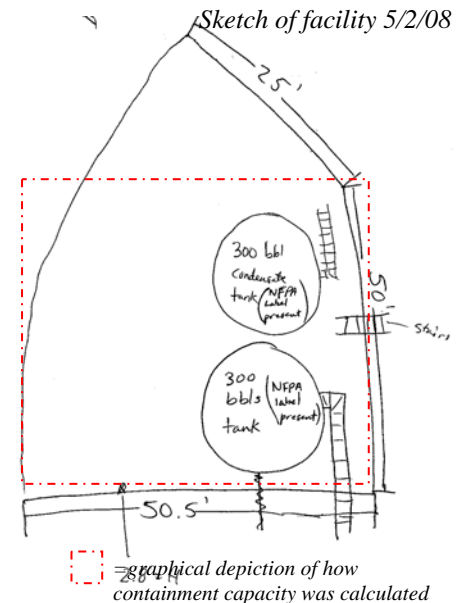
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

**14. Secondary Containment Calculations:**

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
50.0	50.5	2.8	1:1	300	300	6	NA	NA	NA	NA	955.27	yes

15. Additional Notes: Containment calculated conservatively as shown in sketch

620-33**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	Unknown	Unknown contents (contained in 8' diameter stock tank) shown in photograph
Tank 4	145 gallon	Scortron GR-164 (plastic container)
Frac truck	Unknown	Unknown (not in containment)
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☒ Yes ☐ No

Where: 2 inside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be to the northwest and would follow roadside trough coming into contact with the creek approximately 450' down-gradient.

6. Physical Location: NWSE, Section 20, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

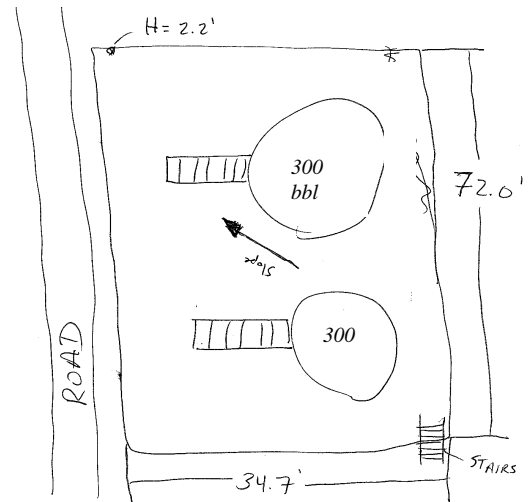
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

**14. Secondary Containment Calculations:**

Sketch of facility 5/2/08

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
72.0	34.7	2.2	1:1	300	300	6	NA	NA	NA	NA	733.95	yes

15. Additional Notes: Hesco barrier containment, square containment, contains good fill material for barriers.

620-43-32**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	145 gallon	Scortron GR-164 (plastic containment)
Frac truck	Unknown	Unknown (Not in containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

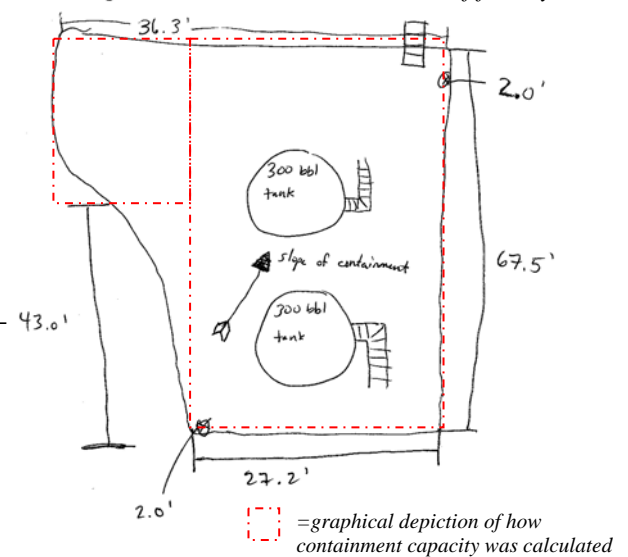
3. NFPA Label? ☒ Yes ☐ No4. Stairs in containment? ☒ Yes ☐ NoWhere: 2 inside as shown below5. Drainage pathway and Distance to Navigable Waters: Flow would drain to the north and ultimately down the road and into Conn Creek approximately 450' away.6. Physical Location: NESE, Section 20, T6S, R97W7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A**14. Secondary Containment Calculations:**

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Adequate for stored tanks?
See Sketch			1:1	300	300	6	NA	NA	NA	NA	531.31	yes

620-43-32 containment Sketch of facility 5/2/08



15. Additional Notes: Plastic tank containment for 145 gallon Scortron GR-164 is 4' * 6' * 1.2' = 215 gal. Irregular containment, calculated in two sections as shown on sketch, side slope reduction removed for "shared" side between sections within the containment.

629-02**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	500 gallon	Methanol (contained in 8' diam. stock tank)
Tank 4	145 gallon	Scortron GR-164 (plastic container)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☒ Yes ☐ No

Where: 1 outside, 1 inside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be to the SE out of containment and follow south containment wall SW off pad into culvert approximately 150' away. Spill would flow approximately 150' additional feet from culvert into small ditch and then into Conn Creek.

6. Physical Location: SENW, Section 29, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

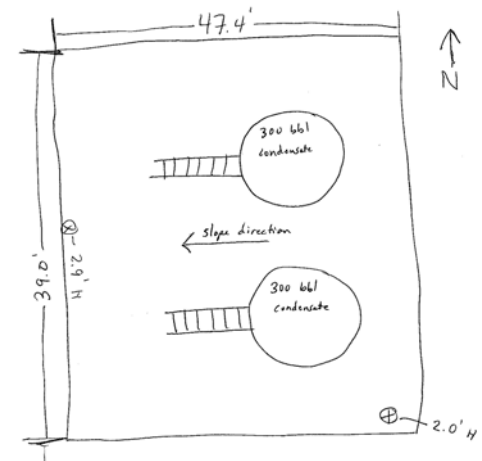
If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
47.4	39.0	2.0	1:1	300	300	6	NA	NA	NA	NA	476.25	yes

15. Additional Notes: Hesco barrier used for containment with good fill material for barriers used. 1 – 2" of water found in 8' diameter stock tank used for 500 gallon methanol containment.



Sketch of facility 5/2/2008

629-23-42**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	(4) 145 gallon	Scortron GR-164 (plastic containment)
Tank 4	500 gallon	Methanol (contained in 8' diam. Stock tank)
Frac tank	Unknown	Unknown (not in containment)
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☒ Yes ☐ No

Where: 2 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be SE along berm on E side of road, then across road to contact creek. Entire length is approximately 550'.

6. Physical Location: NESW, Section 29, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

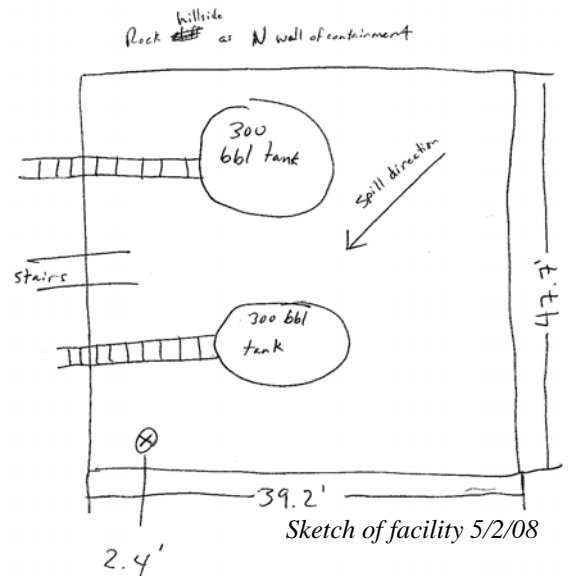
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

**14. Secondary Containment Calculations:**

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
47.7	39.2	2.4	1:1	300	300	6	NA	NA	NA	NA	581.81	yes

15. Additional Notes: Hesco barrier containment with good fill material used for barriers. Spill direction in containment would be to the southwest.

629-31-11**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	500 gallons	Methanol (contained in 8' diam. stock tank)
Tank 2	400 Bbls	Natural gas condensate
Tank 3	400 Bbls	Natural gas condensate
Frac Truck	Unknown	Unknown contents (not in containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No4. Stairs in containment? ☒ Yes ☐ NoWhere: 2 inside as shown below

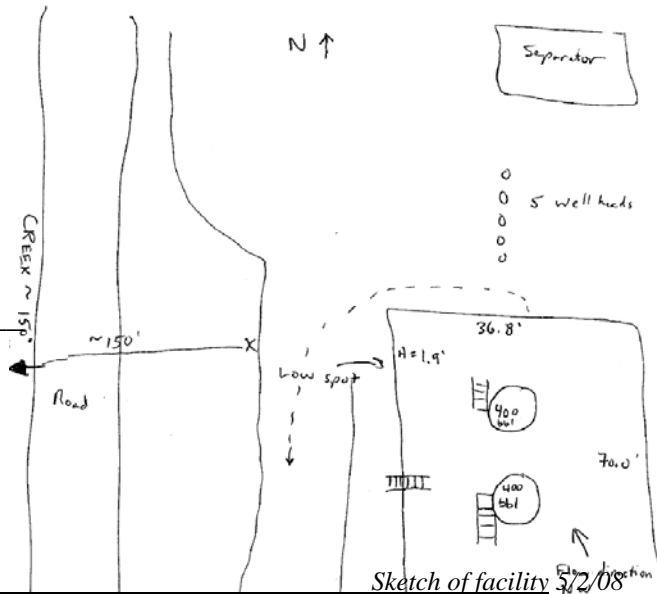
5. Drainage pathway and Distance to Navigable Waters: Flow would be to the north then turning west and ultimately to the south. Flow would pond up south of well heads, then spill down road in direction of main road and creek. Creek located approximately 500 feet down road.

6. Physical Location: NWNE, Section 29, T6S, R97W7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A**14. Secondary Containment Calculations:**

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
70.0	36.8	1.9	1:1	400	400	6	NA	NA	NA	NA	651.72	yes

15. Additional Notes: Hesco-Barrier containment walls, good dirt materials used, NW corner is low spot

632-13-22**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	400 bbl	Natural gas condensate
Tank 2	400 bbl	Natural gas condensate
Tank 3	500 gallon	Methanol (contained in 8' diam. stock tank)
Tank 4	(3) 145 gallon	Scortron GR-164 (plastic containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

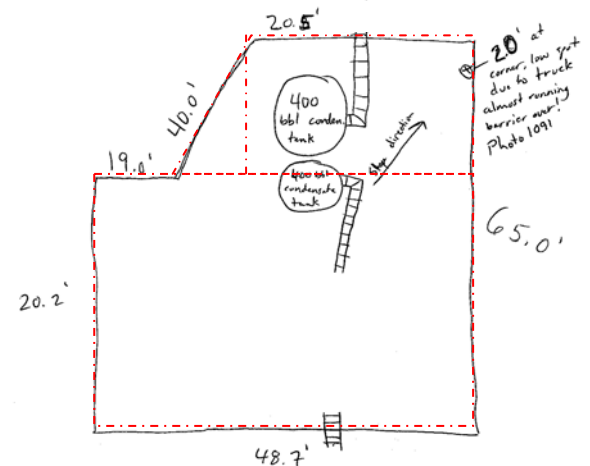
3. NFPA Label? ☒ Yes ☐ No4. Stairs in containment? ☒ Yes ☐ NoWhere: 1 outside, 1 inside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be from NE corner of containment to the W/SW off pad, then directly W into Conn Creek. Total spill length to contact Conn Creek is approximately 250'.

Sketch of facility 5/2/08

6. Physical Location: NWNW, Section 32, T6S, R97W7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

 = graphical depiction of how containment capacity was calculated

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
See Sketch			1:1	400	400	6	NA	NA	NA	NA	631.42	yes

15. Additional Notes: Hesco barrier used for containment with good fill material. Truck tire track and evidence of spill are found in photo 2 above. Truck tire track is the point of spill location and the low height of the containment. Need to rectify before containment corner is compromised.

632-21-41

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	500 gallon	Methanol (contained in 8' diam. stock tank)
Tank 3	145 gallon	Scortron GR-164 (plastic containment)
Tank 4	~100 bbl	Unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph taken during November 17, 2008 inspection

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 set of tank access stairs exits to the south and outside the containment wall and 1 set of containment access stairs over south wall, as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be from the NE corner of the containment and then SW off pad. Flow would contact the main road approximately 1000' away and finally into the creek another 100' beyond.

6. Physical Location: NENW, Section 32, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

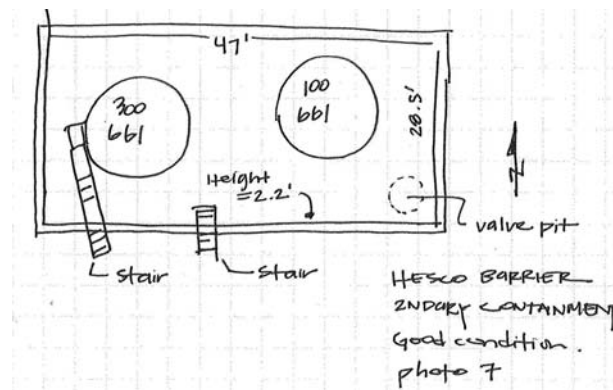
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☐ Yes ☒ No

If Yes, piping supports adequate? ☐ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 11/17/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
47	28.5	2.2	NA	300	Unk	5.75	NA	NA	NA	NA	440	yes

15. Additional Notes: 145 gallon Scortron GR-164 tank contained in 4' * 6' * 1.2' plastic container. Hesco barrier used for containment is in good condition. Slope direction in containment is NE. One partially buried tank (11.5' diameter) is located within the containment area. While the exact volume of the tank is unknown, it appears that the capacity is at least 100 bbl. The contents of the tank are unknown.

697-09-61**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

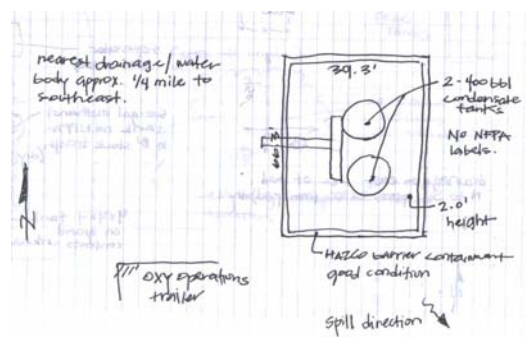
Quantity: _____

3. NFPA Label? ☐ Yes ☒ No4. Stairs in containment? ☐ Yes ☒ NoWhere: 1 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the southeast off the corner of the pad. The distance to the nearest water body is > 1/4 mile.

6. Physical Location: SWSE Section 9, T 6 S, R 97 W.7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☐ Yes ☒ NoIf Yes, cathodically protected and wrapped? ☐ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

Sketch of facility 7/30/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
66.3	39.3	2.0	1:1	400	400	6	NA	NA	NA	NA	698.5121	yes

15. Additional Notes: The well was being drilled at the time of the site inspection. While there were numerous temporary vehicles, equipment, and tanks on the pad for drilling activities; all permanent tanks and system components had not yet been installed.

697-15-54

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2	400 bbl	natural gas condensate
3	400 bbl	natural gas condensate
4	100 bbl	natural gas condensate
5 – elevated	500 gallon	methanol
6 – ground level	32 cf	unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph 01/28/09

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: two sets of tank access stairs exit outside containment and one set of containment access stairs over east wall, as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the northwest. The nearest surface water body is > 1/4 mile from the pad.

6. Physical Location: SWSE Section 15, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

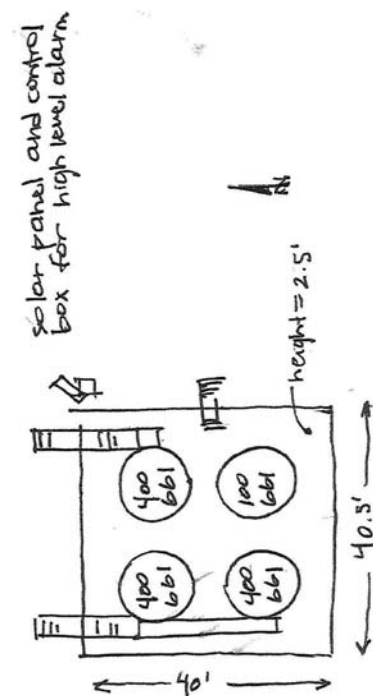
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 01/28/09

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
40.5	40.0	2.5	NA	400	400	6	400	6	100	6	498.1260	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol and with NFPA label) which is contained by an 8' diameter stock trough – dry; one 4'x4'x2' tank, contents unknown; four 8' stock troughs used to collect leakage from hose hook-up ports on north side of pond, each trough containing between 1" and 3" of liquid; one 4'x2'x2' trough used to collect spillage from pump set up at northwest corner of pond. An earth berm (approximately 40'x40'x1') and fence surround the separator, 500-gal methanol tank, and 4'x4'x2' tank.

697-16-28

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2 – elevated	500 gallon	methanol
3 – ground level	32 cf	unknown
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☒ Yes ☐ No

Quantity: 6 drums, contents unknown

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☒ Yes ☐ No

Where: 1 set exits directly on top of containment berm along south wall

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the northeast. The nearest surface water body is > ½ mile from the pad.

6. Physical Location: SWNE Section 16, T 6 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☒ Yes – Type: wire ☐ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

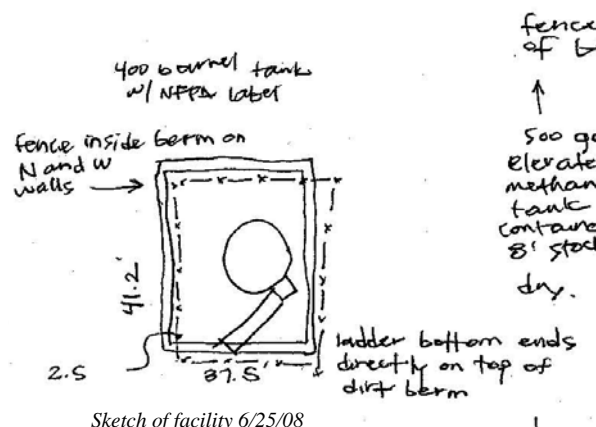
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
41.2	37.5	2.5	1:1	400	NA	NA	NA	NA	NA	NA	535.2505	yes

15. Additional Notes: Additional tanks on pad include the following: one 500-gal elevated steel tank (labeled methanol and with NFPA label) which is contained by an 8' diameter stock trough – dry; one 4'x4'x2' tank,

contents unknown; six 55-gal drums, contents unknown, which are contained by two 5'x2'x2' stock troughs – dry. These additional tanks are all contained within a 40'x40' earth berm and fence.

697-20-28

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	500 gallon	Methanol (contained in 8' stock tank)
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☒ Yes ☐ No

Where: 1 outside, 1 inside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be from the north wall of containment into trough and approximately 700' down trough on the side of pad (shown in photo above) and into creek.

6. Physical Location: SENW, Section 20, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

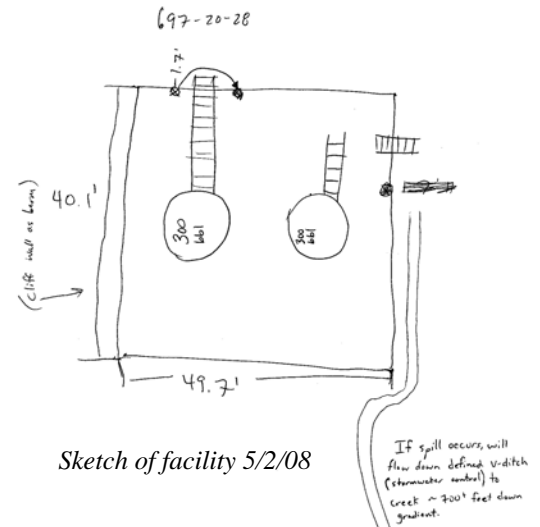
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☐ Yes ☒ No

If Yes, piping supports adequate? ☐ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
49.7	40.1	1.7	1:1	300	300	6	NA	NA	NA	NA	435.4	yes

15. Additional Notes: Hesco barrier containment with low spot along north wall. Spill would flow from low spot into trough next to containment and down the side of reclaimed area into the creek.

705-22-43**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	500 gallon	Methanol (contained in 8' diam. stock tank)
Tank 4	145 gallon	Cortron GR-164 (plastic containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

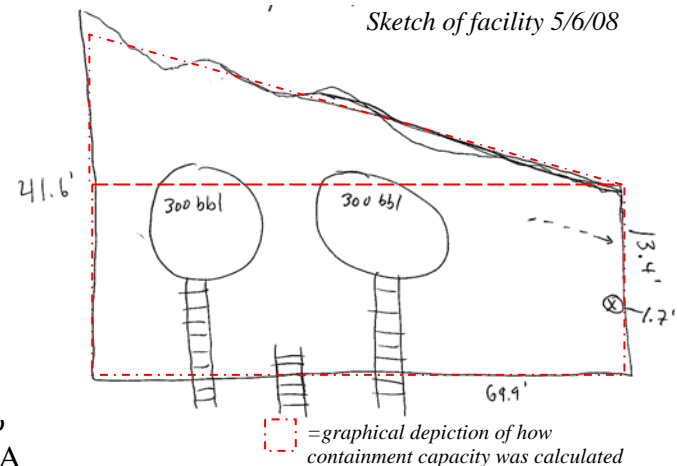
Quantity: _____

3. NFPA Label? ☒ Yes ☐ No4. Stairs in containment? ☐ Yes ☒ NoWhere: 2 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be out of E wall of containment and S off pad. Flow would cross road and contact irrigation ditch approximately 1000' away, and then follow the irrigation ditch 500' and enter Conn Creek.

6. Physical Location: SENW, Section 5, T7S, R97W7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A**14. Secondary Containment Calculations:**

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
See Sketch			1:1	300	300	6	NA	NA	NA	NA	411.81	Yes

15. Additional Notes: 145 gallon Scortron GR-164 tank contained in 4'*6'*1.2' plastic container. Hesco barrier with good fill material used for containment. Spill evident south of west 300 bbl natural gas condensate

tank (see photo above). Containment would fill E side first, then level off and fill entire containment. Low spot found on E wall.

796-19C

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	300 bbl	natural gas condensate
2	300 bbl	natural gas condensate
3	300 bbl	natural gas condensate
4	300 bbl	natural gas condensate
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☒ Yes ☐ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 set of containment area access stairs over north wall
of containment, no tank access stairs installed as of date of
inspection

5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the north, across the dirt access road and down a slope off the north side of the road. Nearest drainage is located > 1/4 mile away.

6. Physical Location: NWNE Section 19, T 7 S, R 96 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

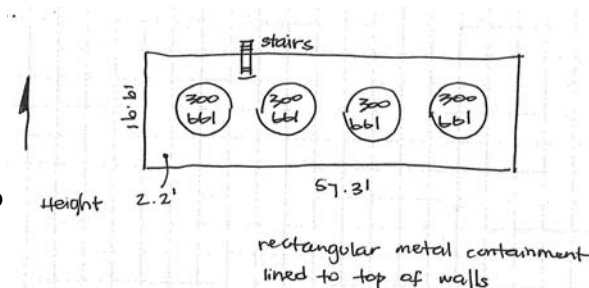
13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
57.3	19.9	2.5	NA	300	300	6	300	6	300	6	306	yes



Photograph taken during
November 18, 2008 inspection



Sketch of facility 11/18/08

15. Additional Notes: Well work during inspection and additional work being done on tanks at time of inspection; therefore, no other tanks on pad were accessible.

797-05-36**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	500 gallon	Methanol (contained in 8' diam. stock tank)
Tank 4	145 gallon	Scortron GR-164 (plastic containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☐ Yes ☒ No4. Stairs in containment? ☐ Yes ☒ NoWhere: 2 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be down the pad road and into an irrigation ditch approximately 1000' away. Would flow approximately 500' in the irrigation ditch to Conn Creek.

6. Physical Location: NESW, Section 5, T7S, R97W7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

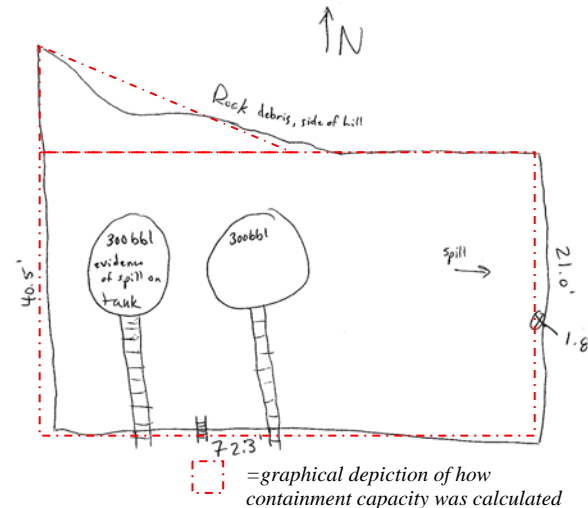
If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A**14. Secondary Containment Calculations:**

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
See Sketch			1:1	300	300	6	NA	NA	NA	NA	420.69	yes

15. Additional Notes: 145 gallon Scortron GR-164 tank contained in 4'*6'*1.2' plastic container. Evidence of spill on west 300 bbl natural gas condensate tank. Containment would fill on W½ first, then fill entire containment and flow over E wall. Hesco barriers used with good fill material.

Sketch of facility 5/8/08



797-05-52**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	500 gallon	Methanol (contained in 8' diam. stock tank)
Tank 4	(3) 145 gallon	Scortron GR-164 (plastic containments)
Tank 5	Small square tank	Unknown (in photo 2)
Frac tanks	(6) Unknown	Unknown (not contained)
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☒ Yes ☐ No

Where: 1 outside, 1 inside as shown below

5. Drainage pathway and Distance to Navigable Waters: Spill will flow from SE corner of containment and off NW corner of pad along road. Spill will flow down road and then cross small field finally entering Conn Creek approximately 400' down-gradient.

6. Physical Location: SESW, Section 5, T7S, R97W

Sketch of facility 5/2/08

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒

8. Exterior Lighting? ☐ Yes – Type: _____ ☒

9. Site Fenced? ☐ Yes – Type: _____ ☒

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

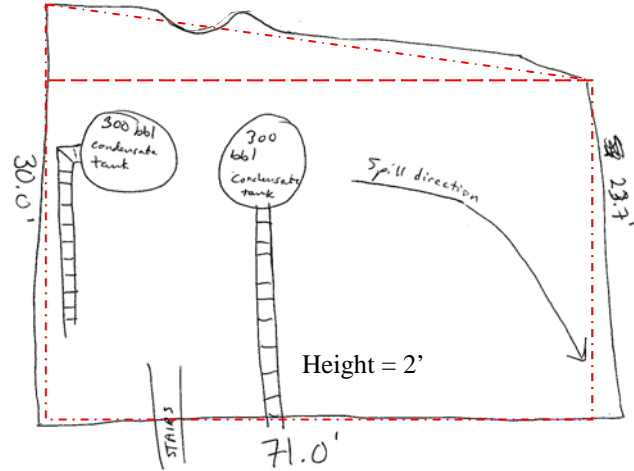
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

**14. Secondary Containment Calculations:**

=graphical depiction of how containment capacity was calculated

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
See Sketch			1:1	300	300	6	NA	NA	NA	NA	485.99	yes

15. Additional Notes: 145 gallon Scortron GR-164 tanks contained in 4'*6'*1.2' plastic containers. Hesco barrier used for containment with small cobble and dir mixture. 8' diameter stock tank used for 500 gallon methanol tank containment has 1" of water in it.

797-06**1. Bulk Storage Containers:**

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	300 bbl	Natural gas condensate
Tank 3	500 gallon	Methanol (contained in 8' diam. stock tank)
Frac truck	Unknown	Unknown (not in containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

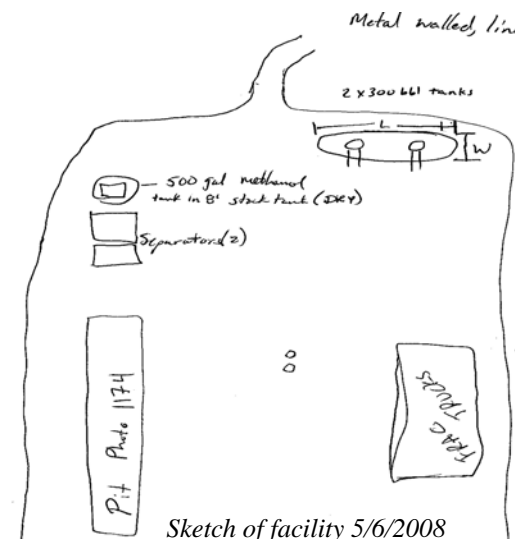
Quantity: _____

3. NFPA Label? ☒ Yes ☐ No4. Stairs in containment? ☐ Yes ☒ NoWhere: 2 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be to the north down road and across reclaimed area to Conn Creek approximately 800' down gradient.

6. Physical Location: NENE, Section 6, T7S, R97W7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No9. Site Fenced? ☐ Yes – Type: _____ ☒ No10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A**14. Secondary Containment Calculations:**

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
44.0	24.3	2.6	1:1	300	300	6	NA	NA	NA	NA	317.08	yes

15. Additional Notes: 8' diameter stock tank containing 500 gallon methanol tank is dry. Note: containment was calculated based on 1:1 slope assumption on interior of containment for conservative estimation, actual containment will be greater if fill is not sloped against interior containment wall at 1:1 slope.

797-09A

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	300 bbl	produced water
2	300 bbl	oil
3	125 bbl	test
4	500 gallon	methanol
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 2 outside, 1 over containment for access, on north side of containment



5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the north. The nearest surface water body is > 1/4 mile from the pad.

6. Physical Location: NENW Section 9, T 7 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ No

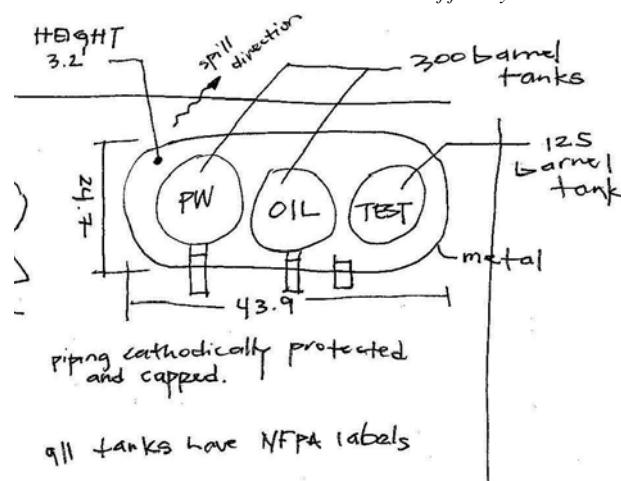
If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

Sketch of facility 6/25/08



14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
43.9	24.7	3.2	NA	300	300	6	124	6	NA	NA	318.5433	yes

15. Additional Notes: Secondary containment is oval-shaped. Diameter of end 1/2 circles taken from width of containment shape. Special geometry was taken into account for containment volume calculation.

Additional tanks located on pad include: 500-gal elevated steel tank (contains methanol) contained by 8' diameter stock trough – dry.

Central Water Facility (East portion)

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
Tank 1	400 bbl	Natural gas condensate Water 1
Tank 2	400 bbl	Natural gas condensate Water 2
Tank 3	300 bbl	Natural gas condensate Oil 1
Tank 4	300 Bbl	Natural gas condensate Oil 2
Underground Storage Tanks	Volume	Contents
None		



Photograph taken during November 17, 2008 inspection

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 2 tank access stairs exit outside north and south walls of containment, and 2 sets of stairs over east and west containment walls, as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be out of SE corner of containment and flow into small ditch coming into contact with Conn Creek approximately 250' down gradient.

6. Physical Location: SWSW, Section 29, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

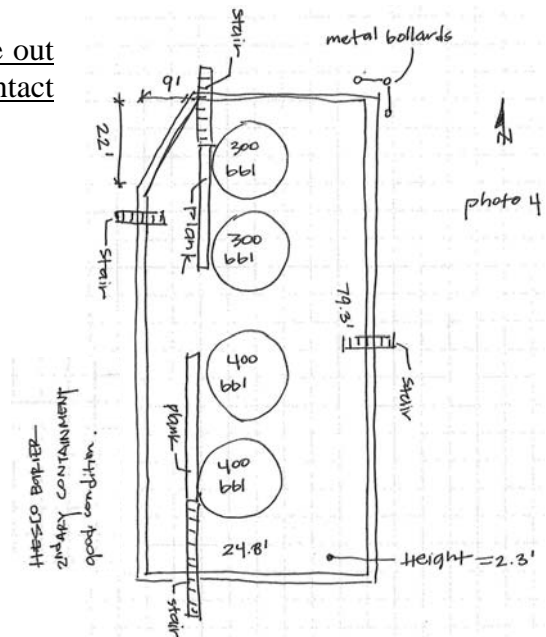
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Sketch of facility 11/17/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
79.3	24.8	2.3	NA	400	400	6	300	6	300	6	616	yes

15. Additional Notes: Containment constructed of HESCO barriers. All four tanks found inside containment area as shown above. All four tanks inside containment have labeling identifying each as “Natural gas condensate, Water 1/2” or “Natural gas condensate Oil 1/2”.

Central Water Facility (West most portion)

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
Tank 1	400 bbl	Natural gas condensate
Tank 2	400 bbl	Natural gas condensate
Tank 3	500 gallon	(5) Ethylene glycol, (4) Diesel fuel
Tank 4	~100 bbl	Unknown (separate earth berm containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☒ Yes ☐ No

Where: 1 set of tank access stairs exits inside containment as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be out of north, low spot of containment, down small ditch and finally into Conn Creek approximately 500' down-gradient.

6. Physical Location: SWSW, Section 29, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

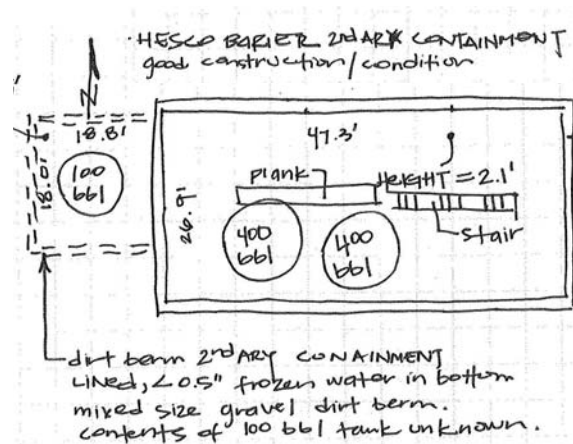
12. Above ground piping onsite? ☐ Yes ☒ No

If Yes, piping supports adequate? ☐ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



Photographs taken during November 17, 2008 inspection



Sketch of facility 11/17/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
47.3	26.9	2.3	NA	400	400	6	NA	NA	NA	NA	418	yes
18.8	18.0	1.5	1:1	100	NA	NA	NA	NA	NA	NA	65	NO

15. Additional Notes: West most portion of the Central Water Facility; staging for diesel fuel tanks and ethylene glycol tanks. 500 gallon tanks of ethylene glycol and diesel fuel are contained in 8' diam. stock tanks.

One 8' diam. stock tank has been dented by traffic and height is 1.4', stock tank has not been compromised though. Secondary containment walls for two 400 bbl tanks are comprised of HESCO barriers. Containment is in good condition and provides sufficient capacity. Oxy is currently reviewing the condition of containment systems at the CWHF and these systems will be updated as necessary to accomodate regulatory requirements.

FED 23-15

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	400 bbl	natural gas condensate
2 – ground level	32 cf	unknown
3 – elevated	500 gallon	methanol
4 – elevated	500 gallon	methanol
5 – ground level	1000 gallon	diesel
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 outside as shown below



5. Drainage pathway and Distance to Navigable Waters: There is no obvious direction of spill; however, nearest slope to west of pad. The nearest surface water body is > ¼ mile from the pad.

6. Physical Location: NWSW Section 15, T 6 S, 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☒ Yes – Type: wire ☐ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ No

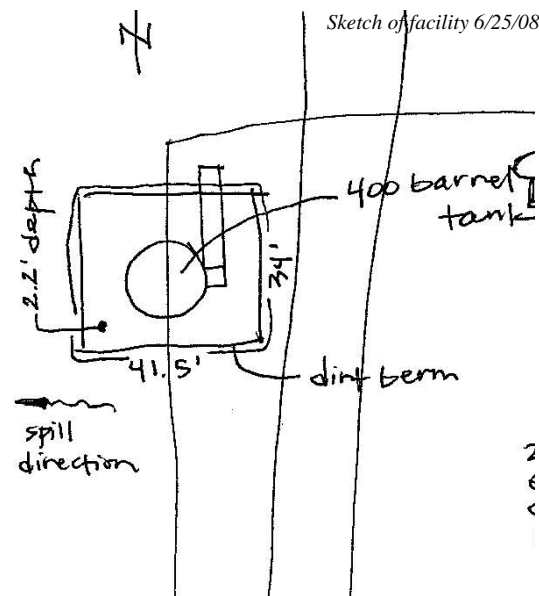
If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

14. Secondary Containment Calculations:



Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
41.5	34.0	2.2	1:1	400	NA	NA	NA	NA	NA	NA	427.4987	yes

15. Additional Notes: Additional tanks on pad include the following: 4'x4'x2' ground level tank, unknown contents; 5'x2'x2' oval-shaped stock trough – 2" water with sheen; two 500-gal elevated steel tanks (one

labeled methanol, the other not labeled) which are contained by 8' diameter stock troughs, one of which contained 2" standing water; 5'x10' cylindrical self-contained diesel fuel tank, containment box extends to 2/3 height of tank (on its side).

Federal 708-11

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	500 gallon	Methanol (contained in 8' diam. stock tank)
Tank 3	145 gallon	Scortron GR-164 (plastic containment)
Underground Storage Tanks	Volume	Contents
None		



2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 outside as shown below

5. Drainage pathway and Distance to Navigable Waters: Flow would be to the north along road and contact Conn Creek approximately 400' down gradient.

6. Physical Location: NWNW, Section 8, T7S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

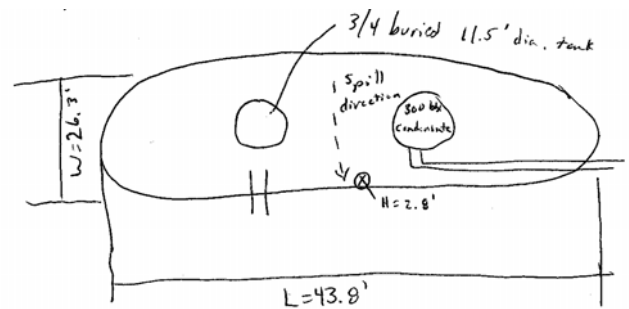
11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A



14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
43.8	26.3	2.8	NA	300	Unk	5.75	NA	NA	NA	NA	359.11	yes

15. Additional Notes: Spill noted on top and side of 3/4 buried 11.5' diameter tank inside containment (by hatch on top of tank). 145 gallon Scortron GR-164 contained in 4'*6'*1.2' plastic container. Containment calculated without side slopes based on elliptical configuration of containment.

Federal 797-08-19**1. Bulk Storage Containers:**

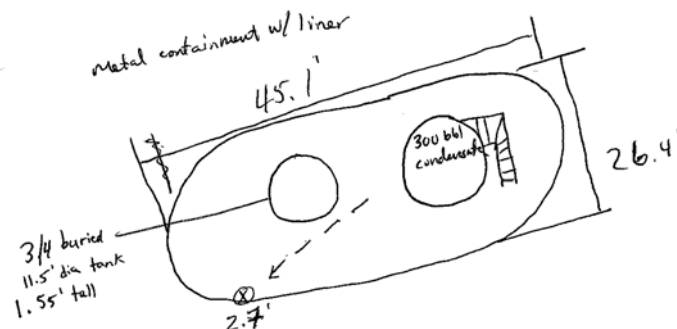
Tank ID or Name	Volume	Contents
Tank 1	300 bbl	Natural gas condensate
Tank 2	145 gallon	Scortron GR-164 (plastic containment)
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No4. Stairs in containment? ☒ Yes ☐ NoWhere: 1 inside as shown below5. Drainage pathway and Distance to Navigable Waters: Flow would be to the north approximately 350' and ultimately into Conn Creek.6. Physical Location: SENW, Section 8, T7S, R97W7. Spill-kit onsite? ☐ Yes – Where: _____8. Exterior Lighting? ☐ Yes – Type: _____9. Site Fenced? ☐ Yes – Type: _____10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ NoIf Yes, cathodically protected and wrapped? ☒ Yes ☐ No12. Above ground piping onsite? ☒ Yes ☐ NoIf Yes, piping supports adequate? ☒ Yes ☐ No13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

Sketch of facility 5/6/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
45.1	26.4	2.7	NA	300	Unk	5.75	NA	NA	NA	NA	358.11	yes

15. Additional Notes: 145 gallon Scortron GR-164 tank contained in 4'*6'*1.2' plastic containment. One partially buried tank (contents unknown) is located within the containment area. This tank has a diameter of 11.5' and is approximately 3/4 buried. One 4' square tank (contents unknown) is located outside of the containment area and is approximately 3/4 buried. Containment calculated without side slopes based on elliptical configuration of containment.

Federal 797-08-51D

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
1	300 bbl	natural gas condensate
2	~100 bbl	Unknown
Underground Storage Tanks	Volume	Contents
None		



Photograph taken during
November 18, 2008 inspection

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: 2 drums, contents unknown

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: 1 set of tank access stairs exits to the east and outside containment wall and 1 set of containment area access stairs over south wall, as shown below

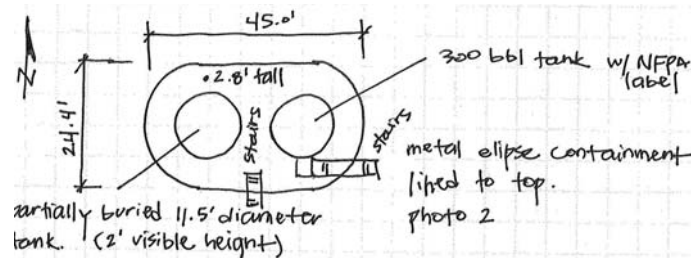
5. Drainage pathway and Distance to Navigable Waters: Spill direction is to the east. The nearest surface water body is > 1/2 mile from the pad.

6. Physical Location: SWSW Section 8, T 7 S, R 97 W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No



10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☒ Yes ☐ No

If Yes, cathodically protected and wrapped? ☒ Yes ☐ No

12. Above ground piping onsite? ☒ Yes ☐ No

If Yes, piping supports adequate? ☒ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

Sketch of facility 11/18/08

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
45.0	24.4	2.8	NA	300	Unk	5.75	NA	NA	NA	NA	340	yes

15. Additional Notes: Additional tank on pad is one 500-gal elevated steel tank (labeled methanol with NFPA label) which is contained by 8' diameter stock trough – dry.

Gas Plant Fuel Storage

1. Bulk Storage Containers:

Tank ID or Name	Volume	Contents
Tank 1	500 gallon	Ethylene glycol
Tank 2	(2) 500 gallon	Used Oil
Tank 3	(2) 500 gallon	Diesel
Underground Storage Tanks	Volume	Contents
None		

2. 55 Gallon Drums? ☐ Yes ☒ No

Quantity: _____

3. NFPA Label? ☒ Yes ☐ No

4. Stairs in containment? ☐ Yes ☒ No

Where: _____

5. Drainage pathway and Distance to Navigable Waters: Flow would be out of SE low spot and flow over ground approximately 80' E before intersecting Conn Creek.

6. Physical Location: SW, Section 32, T6S, R97W

7. Spill-kit onsite? ☐ Yes – Where: _____ ☒ No

8. Exterior Lighting? ☐ Yes – Type: _____ ☒ No

9. Site Fenced? ☐ Yes – Type: _____ ☒ No

10. All Tanks Compatible with contents? ☒ Yes ☐ No

If No, explain _____

11. Buried piping onsite? ☐ Yes ☒ No

If Yes, cathodically protected and wrapped? ☐ Yes ☐ No

12. Above ground piping onsite? ☐ Yes ☒ No

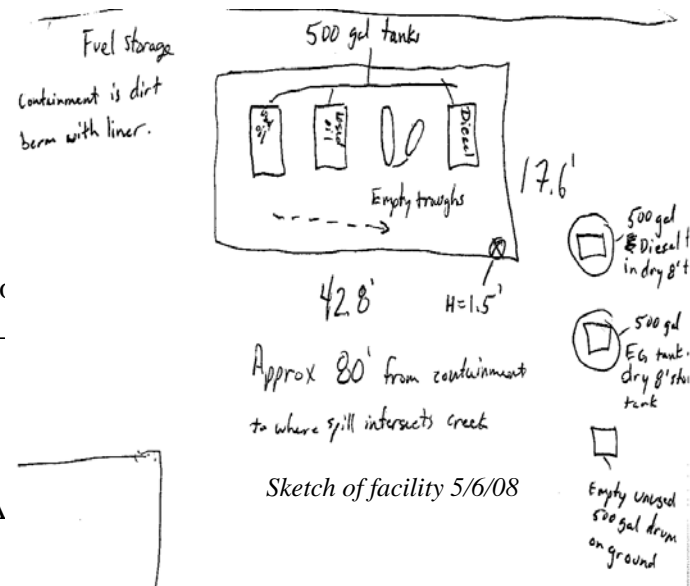
If Yes, piping supports adequate? ☐ Yes ☐ No

13. Corrosion protection for buried tanks? ☐ Yes ☒ N/A

14. Secondary Containment Calculations:

Length (ft)	Width (ft)	Height (ft)	Side slopes	Largest Tank Size (Bbls)	2 nd Tank Size (Bbls)	Radius of 2 nd Tank (ft)	3 rd Tank Size (Bbls)	Radius of 3 rd Tank (ft)	4 th Tank Size (Bbls)	Radius of 4 th Tank (ft)	Total Spill Containment Capacity (including allowance for displacement from tanks, reduction of capacity from side slopes, and allowance for freeboard) (Bbls) *See SPCC Calculation spreadsheet for detailed calculations	Secondary Containment Capacity Adequate for stored tanks?
42.8	17.6	1.50	1:1	11.9	11.9	2	11.9	2	NA	NA	136.1476	yes
8' Diam.		1.75	NA	11.9	NA	NA	NA	NA	NA	NA	13.43	yes

15. Additional Notes: One 500 gallon diesel tank found in 8' diam. stock tank and the others are in the dirt containment. Evidence of spill/overflow found on side of middle 500 gallon used oil tank. The two metal



troughs found in the containment were empty. All 8' diam. stock tanks found at this location were empty and dry. Calculations for displacement from tanks was adjusted for horizontally oriented configuration.

Attachment 2

Secondary Containment Calculations

Oxy SPCC Calculations

Inspection Date	Location #	Section Township and Range	Larget Tank size (Bbl)	Containment Measurements					Containment Calcs without displacement ²								Displacement Cross sectional area of each tank times height of containment					Freeboard Allowance Needed (assuming 3 inches of accumulation)		Spill Containment Available (deducting displacement volume and freeboard)	Containment Sufficient?
				Shape	Length (ft)	Width (ft)	Height (ft)	Slope ratio (ft) (horz to 1 vert)	a	b	x	y	h	Volume (cf)	Volume (Bbls)	Radius of 2nd Tank	Radius of 3rd Tank	Radius of 4th Tank	Total Displacement (cf)	Total Displacement (Bbls)	cubic feet	Bbls			
									0.000	0.000	0.000	0.000	0.000	0.0000	0.0000				0.00	0	0	0	0.0000		no
1/28/2009	603-23-32	SESW, Section 3, T6S, R97W	400	Ellipse	62.00	20.00	2.80	NA	62.000	20.000	-	-	2.800	3231.6459	575.5807	6	6	0	633.35	112.8035763	288.5398163	51.39113615	411.3860		yes
1/28/2009	604-01	SWSW, Section 4, T6S, R97W	400	Ellipse	53.00	24.00	2.80	NA	53.000	24.000	-	-	2.800	3215.4902	572.7033	6	6	0	633.35	112.8035763	287.0973355	51.13421935	408.7655		yes
11/17/2008	604-11	NENE, Section 4, T6S, R97W	400	Ellipse	46.90	25.30	2.80	NA	46.900	25.300	-	-	2.800	2937.7754	523.2402	6			316.67	56.40178814	262.3013776	46.71787062	420.1205		yes
11/17/2008	604-44	NESE, Section 4, T6S, R97W	400	Ellipse	45.00	25.70	2.80	NA	45.000	25.700	-	-	2.800	2841.3214	506.0609	6			316.67	56.40178814	253.6894082	45.18401337	404.4751		yes
11/17/2008	605-01	SWNW, Section 5, T6S, R97W	300	Rectangular	40.00	40.00	2.90	0	40.000	40.000	40.000	40.000	2.900	4640.0000	826.4193	6	6	6	983.95	175.2484132	400	71.24304271	579.9278		yes
1/28/2009	605-13-22	SWSW, Section 5, T6S, R97W	400	Ellipse	44.00	28.00	2.80	NA	44.000	28.000	-	-	2.800	2978.5060	530.4946	6	0	0	316.67	56.40178814	265.93804	47.36558786	426.7272		yes
1/28/2009	605-23	NESW, Section 5, T6S, R97W	400	Ellipse	42.00	28.00	2.80	NA	42.000	28.000	-	-	2.800	2821.7060	502.5673	6	0	0	316.67	56.40178814	251.93804	44.87208137	401.2934		yes
11/19/2008	608-43-31	NESE, Section 8, T6S, R97W	400	Rectangular	40.00	40.00	2.70	0	40.000	40.000	40.000	40.000	2.700	4320.0000	769.4249	6	6	6	916.09	163.1623157	400	71.24304271	535.0195		yes
1/28/2009	609-01	NWSW, Section 9, T6S, R97W	300	Ellipse	45.00	22.00	2.70	NA	45.000	22.000	-	-	2.700	2392.5583	426.1328	6	0	0	305.36	54.38743857	221.5331778	39.45674412	332.2887		yes
1/28/2009	609-02	SENW, Section 9, T6S, R97W	400	Ellipse	39.50	29.00	3.00	NA	39.500	29.000	-	-	3.000	2895.0596	515.6321	6	0	0	339.29	60.43048729	241.2549639	42.96934424	412.2323		yes
6/25/2008	609-14	SWSW, Section 9, T6S, R97W	300	Rectangular	43.00	42.00	1.50	1	40.000	39.000	43.000	42.000	1.500	2522.2500	449.2319				0.00		451.5	80.41558446	368.8163		yes
1/28/2009	610-22-43	SENW, Section 10, T6S, R97W	400	Ellipse	46.00	26.00	2.80	NA	46.000	26.000	-	-	2.800	2942.6016	524.0997	6	0	0	316.67	56.40178814	262.7322896	46.79461933	420.9033		yes
1/28/2009	610-24-43	SESW, Section 10, T6S, R97W	400	Ellipse	62.00	25.00	2.80	NA	62.000	25.000	-	-	2.800	3964.4468	706.0981	6	6	0	633.35	112.8035763	353.968463	63.04447583	530.2501		yes
1/28/2009	616-21-32	NENW, Section 16, T6S, R97W	400	Ellipse	64.00	22.00	2.80	NA	64.000	22.000	-	-	2.800	3651.5716	650.3727	6	6	0	633.35	112.8035763	326.0331778	58.06898903	479.5001		yes
5/2/2008	617-24	SESW, Section 17, T6S, R97W	300	Rectangular	60.70	30.60	2.00	1	56.700	26.600	60.700	30.600	2.000	3360.3067	598.4962	6	0	0	226.19	40.28699153	464.355	82.70515775	475.5040		yes
11/17/2008	617-41	NENE, Section 17, T6S, R97W	400	Rectangular	40.00	40.00	2.30	0	40.000	40.000	40.000	40.000	2.300	3680.0000	655.4360	6	6	6	780.37	138.9901208	400	71.24304271	445.2028		yes
11/17/2008	620-01	SESW, Sec 5, T7S, R97W	400	Rectangular	55.00	39.00	2.00	0	55.000	39.000	55.000	39.000	2.000	4290.0000	764.0816	6	5.75	0	433.93	77.28667646	536.25	95.51020414	610.8766		yes
	2nd portion of containment for 620-01			Triangle	39.00	17.00	2.00	0						585.0000	104.1929				0.00	0	82.875	14.76066791	89.4323		-
5/2/2008	620-21AD	NENW, Section 20, T6S, R97W	400	Rectangular	68.60	34.40	2.40	1	63.800	29.600	68.600	34.400	2.400	5088.7680	906.3483	6	5.75	0	520.72	92.74401175	589.96	105.0763637	708.5279		yes
5/2/2008	620-24-43	SESW, Section 20, T6S, R97W	300	Rectangular	50.00	50.50	2.80	1	44.400	44.900	50.000	50.500	2.800	6311.3493	1124.0993	6			316.67	56.40178814	631.25	112.4304268	955.2671		yes
5/2/2008	620-33	NWSE, Section 20, T6S, R97W	300	Rectangular	72.00	34.70	2.20	1	67.600	30.300	72.000	34.700	2.200	4994.2493	889.5138	6	0	0	248.81	44.31569068	624.6	111.2460112	733.9521		yes
5/2/2008	620-43-32	NESW, Section 20, T6S, R97W	300	Irregular	67.50	27.20	2.00	1	63.500	23.200	67.500	27.200	2.000	3303.8667	588.4438	6	0	0	226.19	40.28699153	459	81.75139151	466.4054		yes
	2nd portion of containment for 620-43-32 and correction			Irregular	24.50	9.10	2.00	1	20.500	5.100	24.500	9.100	2.000	322.1667	57.3803				0.00	0	55.7375	9.927272733	64.9076		-
1/28/2009	629-01	SWSW, Section 29, T6S, R97W	300	Ellipse	39.00	23.50	2.80	NA	39.000	23.500	-	-	2.800	2234.3612	397.9567	6	0	0	316.67	56.40178814	199.4965339	35.53185022	306.0231		yes
5/2/2008	629-02	SWNW, Section 29, T6S, R97W	300	Rectangular	47.40	39.00	2.00	1	43.400	35.000	47.400	39.000	2.000	3362.2667	598.8453	6	0	0	226.19	40.28699153	462.15	82.31243048	476.2458		yes
5/2/2008	629-31-11	NWNE, Section 29, T6S, R97W	400	Rectangular	70.00	36.80	1.90	1	66.200	33.000	70.000	36.800	1.900	4517.9973	804.6897	6	0	0	214.88	38.27264195	644	114.7012988	651.7158		yes
5/2/2008	629-02	SENW, Section 29, T6S, R97W	300	Rectangular	47.40	39.00	2.00	1	43.400	35.000	47.400	39.000	2.000	3362.2667	598.8453	6	0	0	226.19	40.28699153	462.15	82.31243048	476.2458		yes
5/2/2008	629-23-42	NESW, Section 29, T6S, R97W	300	Rectangular	47.70	39.20	2.40	1	42.900	34.400	47.700	39.200	2.400	4005.5040	713.4107	6	0	0	271.43	48.34438984	467.46	83.25818187	581.8082		yes
5/2/2008	632-13-22	NWNW, Sec 32, T6S, R97W	400	Rectangular	20.20	48.70	2.00	1	16.200	44.700	20.200	48.700	2.000	1702.5467	303.2365	6	0	0	226.19	40.28699153	245.935	43.80289427	316.5466		no
	2nd portion of containment for 632-13-22			Rectangular	20.50	44.80	2.00	1	16.500	40.800	20.500	44.800	2.000	1586.2667	282.5262				0.00	0	229.6	40.89350652	264.8935		-
	3rd portion of containment for 632-13-22			Triangle	9.20	44.80	2.00	1						332.1600	59.1602				0.00	0	51.52	9.176103902	49.9841		-
11/17/2008	632-21-41	NWNW, Section 32, T6S, R97W	300	Rectangular	47.00	28.50	2.20	0	47.000	28.500	47.000	28.500	2.200	2946.9000	524.8653	5.75	0	0	238.90	42.54963767	334.875	59.64378482	440.2575		yes
7/30/2008	697-09-61	SWSE, Section																							

Appendix A

Contact Lists and Telephone Numbers

Contact	Title	Work Number	Mobile Number
John Ocana	Facilities Engineer	(970) 263-3603	(970) 985-6057
Brett Kennedy	HES Specialist	(970) 263-3601	(970) 201-2305

Appendix B

Aboveground Storage Tank Monthly Visual Inspection Forms

ABOVEGROUND STORAGE TANK MONTHLY VISUAL INSPECTION FORM

Facility name: OXY – Cascade Creek Field, Garfield County, CO		Inspection Date:
Street address: 760 Horizon Drive #101	City: Grand Junction, CO	ZIP: 81506
<i>Use either this form or its equivalent to document monthly visual inspections required by §3-5 of Colorado's Storage Tank Regulations. Keep these records at least 3 years. However, it is advisable to keep records indefinitely, since they may be required as part of the compliance review concerning a claim for reimbursement from the Petroleum Storage Tank Fund.</i>		
1. Visible leaks on tanks, tank seams, connections, fittings or valves? <input type="checkbox"/> No <input type="checkbox"/> Yes If "yes," identify tank & describe leak. Record action taken to correct problem and date done.		
2. Visible leaks on aboveground piping, pipe seams, connections, fittings, flanges, threaded connections, pumps or valves? <input type="checkbox"/> No <input type="checkbox"/> Yes If "yes," identify & describe leak. Record action taken to correct problem and date done.		
3. Is overfill prevention equipment in good operating condition? <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable If "no," identify tank. Record action taken to correct problem and date done. <i>Verify operation of overfill prevention equipment according to the equipment manufacturer's instructions. Verify operation of audible alarm if it can be tested.</i>		
4. If double-walled tank: A. Is interstice free of liquid? <input type="checkbox"/> No <input type="checkbox"/> Yes If "no," identify tank. Record action taken to correct problem and date done. B. Is interstitial monitoring equipment operating properly? <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable If "no," identify tank. Record action taken to correct problem and date done. <i>Verify operation of interstitial monitoring equipment according to the equipment manufacturer's instructions.</i>		
5. Secondary containment system free of tank product or other liquids/debris, such as rainwater, snowmelt, dirt, leaves, trash, etc.) <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable If "no," identify tank. Record action taken to correct problem and date done.		
6. Are concrete surfaces and ground free of any evidence of new leakage or spillage? <input type="checkbox"/> No <input type="checkbox"/> Yes If "no," describe. Record action taken to correct problem and date done.		
Signed	Date	
Report Suspected or Confirmed Leaks to the Div. of Oil & Public Safety Within 24 Hours: 303-318-8547		

Colo. Dept. of Labor & Employment, Div. of Oil & Public Safety, 633 17th Street, Suite 500, Denver, CO 80202-3660.
 303-318-8500; <http://oil.cdle.state.co.us>

Appendix C

Discharge Evaluation & Event Report

Comments:

Appendix D

Certification of the Applicability of the Substantial Harm Criteria Checklist

Certification of the Applicability of the Substantial Harm Criteria Checklist

Section 112.20(e) of the facility response plan regulation requires that all facilities regulated by the Oil Pollution Prevention Regulation (40 CFR part 112) conduct an initial screening to determine whether they are required to develop a facility response plan. The criteria in this checklist can be found in 40 CFR 112.20(f)(1). Facilities should include this form with their SPCC Plan.

Certification of the Applicability of the Substantial Harm Criteria Checklist

Facility Name: OXY – Cascade Creek Field

Facility Address: 760 Horizon Drive #101, Grand Junction, CO 81506

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes

No

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest above ground oil storage tank area?

Yes

No

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula¹) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "guidance for Facility and Vessel Response Environments" (Section 10, Appendix E, 40 CFR 112 for availability) and the applicable Area Contingency Plan.

Yes

No

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula (Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula¹) such that a discharge from the facility would shut down a public drinking water intake²?

Yes

No

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes

No

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Ben Greinke

Name (please type or print)

Signature

Operations Manager

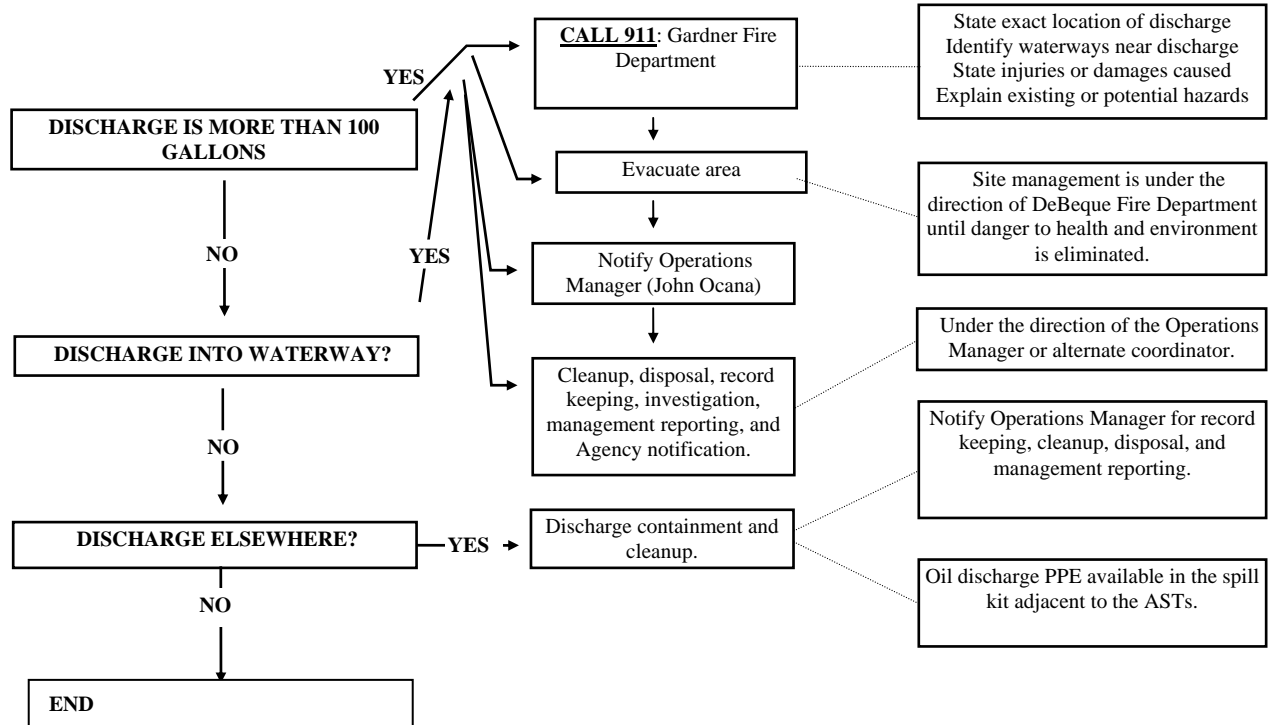
Title

Date

Appendix E

Emergency Response Procedures

EMERGENCY RESPONSE PROCEDURES



Cleanup Procedure:

1. The DeBeque Fire Department is the on-scene commander for initial containment; Plant Specialist or alternate coordinator will coordinate cleanup.
2. Operations Manager or alternate coordinator is responsible for cleanup activity and reporting.
3. Oil soaked soil and materials will be contained upon collection.
4. Oil soaked soil and materials will be disposed of at a non-hazardous waste facility.

EPA Discharge Reporting Procedure: (Reporting will include the following information)

- Name of caller and phone number
- Time, location, and source of discharge
- Material discharged and amount of discharge
- Cause and source of discharge and relevant circumstances
- Existing or potential health and environmental hazards
- Personal injuries or casualties
- Corrective action being taken

Emergency Numbers:

SITE PERSONNEL:	John Ocana (Facilities Engineer – Grand Junction office)	970.985-6057
AGENCIES:	Colorado Department of Public Health and Environment (CDPHE)	877.518.5608
	Environmental Protection Agency (EPA), Region VIII	800.424.8802
	Colorado Division of Oil and Public Safety	303.318.8547
LOCAL CONTACTS:	DeBeque Fire Department	911
CLEANUP/DISPOSAL:	Old West	970.9850852

Appendix F

Loading/Unloading Warning Sign and Procedures

Spill Prevention Control and Countermeasure Plan

Loading and Unloading Procedures

- *YOUR TRUCK MUST HAVE A SPILL KIT.*
 - *A SPILL KIT SHOULD BE AT THE TANK SITE.*
 - *MAKE SURE THAT ALL HOSE CONNECTIONS ARE TIGHT BEFORE OPENING VALVES.*
 - *DRIVER MUST STAY OUTSIDE THE VEHICLE AND WATCH ALL CONNECTIONS THROUGHOUT THE (UN) LOADING.*
 - *CLOSE TRUCK VALVES PRIOR TO DISCONNECTING HOSE.*
 - *USE BUCKET TO CATCH DRIPS WHEN DISCONNECTING HOSE.*
 - *SPREAD ABORBENT ON ANY OIL DRIPS ON THE GROUND.*
 - *MAKE SURE ALL TRUCK AND TANK VALVES ARE SHUT BEFORE LEAVING.*
 - *DRIVER IS RESPONSIBLE FOR TIGHTENING, ADJUSTING, OR REPLACING OUTLETS TO PREVENT ANY LEAKAGE WHILE IN TRANSIT.*
 - *REPORT ANY SPILL TO JOHN OCANA AT (970)985-6057 IMMEDIATELY!*
-

WARNING

DRIVERS-BEFORE
LEAVING
CHECK ALL VALVES
AND CONNECTIONS
MAKE SURE THEY
ARE SECURE
AND VALVES ARE
CLOSED TIGHTLY

Storm Water Management Plan

OXY NORTH

Cascade Creek Common Plan of Development

Garfield County Colorado

General Permit No. COR-038414

Prepared for:

**Occidental USA WTP LP
760 Horizon Drive, Suite 100
Grand Junction, Colorado 81506**

Prepared by:



**Olsson Associates
826 21 ½ Road
Grand Junction, Colorado 81505**

November 2007
Revised May 5, 2009
Revised Jan 14, 2010

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Appendix B	List of Down-Hole Chemicals/MSDS Inventory
Appendix C	Storm Water Inspection Form
Appendix D	Site Map

INTRODUCTION

This Storm Water Management Plan (SWMP) is written to comply with the Colorado Department of Public Health and Environment's (CDPHE) General Permit No. COR-038414 issued on July 1, 2007 (expires on June 30, 2012) and related U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) storm water regulations. This SWMP addresses construction activities associated with development of the natural gas resources for OXY USA WTP LP, in the Cascade Creek Common Plan of Development. A copy of this permit can be found in Appendix A. This field-wide SWMP was prepared to address storm water management practices at areas disturbed by construction and drilling activities associated with natural gas development within Cascade Creek (Permit No. COR-038414.)

This SWMP is intended to be revised as necessary to address planned developments, new disturbances, and other changes needed to manage storm water and protect surface water quality.

Storm Water Runoff Permitting Requirements

The Federal Clean Water Act [Section 402(p)] requires that discharges of pollutants to waters of the U.S. from any point source be regulated by NPDES permits. In November 1990 the EPA published final regulations that established application requirements for storm water associated with construction activity for soil disturbances of 5 acres or more be regulated as an industrial activity and covered by an NPDES permit. In December 1999 the EPA published final Phase II NPDES regulations that established application requirements for storm water associated with construction activity for soil disturbances to be regulated as an industrial activity and covered by an NPDES permit. These regulations became effective July 1, 2002.

On June 30, 2005, Colorado storm water regulations went into effect to require Colorado Discharge Permit System (CPDS) permits for storm water discharges from construction activities for (1 acre or greater) oil and gas activities. Federal permit coverage for these discharges was conditionally exempted from the Federal Clean Water Act by the 2005 Federal Energy Bill. On February 1, 2006, the CDPHE issued a letter clarifying that the CDPHE Water Quality Control Commission decided to maintain the existing requirements for storm water permitting for oil and gas construction sites greater than 1 acre.

Project Description

The Cascade Creek wells will be located within Sections 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 26, 28, 29, 32, 33, and 34 of Township 6 South, Range 97 West; Sections 9, 10, 15, 16, 17, 18, 19, 20, 26, 35, and 36 of Township 7 South, Range 96 West; and Sections 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27 and 28 of Township 7 South, Range 97 West, of Garfield County in Colorado. The town of DeBeque, Colorado is the nearest population center. The Cascade Creek Common Plan of Development will be located approximately 13 miles north of DeBeque (Figure1).
Township 6 & 7 South, Range 96 & 97 West

Sections: 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 28, 29, 32, 33 & 34 of Township 6 South, Range 97 West;

Sections: 9, 10, 15, 16, 17, 18, 19 & 20 of Township 7 South, Range 96 West;

and Sections 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 34, 35, & 36 of Township 7 South, Range 97 West. Garfield County, Colorado

The current drilling and development plan includes pad construction, access road improvement/construction, pit construction, installation of associated facilities, well drilling, well completion, well testing and pipeline construction. The total area of site including the natural gas well pads, the access roads and gathering system pipeline will be 25,000 acres. Total disturbed area is approximately 697 acres.

Project Owner and Operator

The property owner and operator is OXY USA WTP LP. Their address is:

Occidental USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, Colorado 81506
Phone (970) 263-3600

The legal contact is:

Mr. Chris Clark
Regulatory Coordinator
Email address: Chris_Clark@oxy .com
Address is same as listed above
Phone: 970-263-3628

The local contact persons and storm water administrator for the project is:

Mr. Chris Clark
Regulatory Coordinator
Email address: Chris_Clark@oxy .com
Address is same as listed above
Phone: 970-263-3628

Or

Gregory Gipp
Oxy South Super
Gregory_Gipp@oxy.com

Cell (970) 462-1207

OXY will be in charge of all aspects of the property and this project. Contractor(s) will perform the actual construction and drilling, but all work will be supervised by OXY and all decisions will be made by OXY.

This SWMP will be revised as necessary to address new disturbances, construction or operation. Depending on the type and location of new facilities there may be a need for inclusion of new and different BMPs. In general, new development should be planned with consideration for storm water quality (e.g. minimize disturbed area and maximize distance from surface water drainages, as practicable).

1 CONSTRUCTION SITE DESCRIPTION

The following sections describe the site locations and provide a description of the construction areas. Runoff characteristics of these areas are also described.

1. a Nature of Construction Activity

The Cascade Creek wells will be constructed using conventional cut and fill earthmoving techniques. Typically, the working pad surface will have dimension of approximately 200 feet by 400 feet. Specific pad dimensions vary depending on the planned drill rig, number of wells to be drilled from each pad, and local terrain conditions. The well pad will be graded to drain the pad surface and to direct runoff from surrounding areas away from the well pad and reserve pit. Each pad may have a reserve pit that is approximately 60 feet by 250 feet. Reserve pits will be used during activities to contain drilling fluids and cuttings. The reserve pits will be designed, constructed, and reclaimed according to Colorado Oil and Gas Conservation Commission (COGCC) requirements.

In areas that are disturbed by well construction, topsoil will be stripped and stockpiled near the site. Soil materials will be managed so that erosion and sediment transport are minimized. Nearby drainages will be protected by appropriate measures.

If the well is not productive, it will be plugged according to COGCC rules and the pad area reclaimed to approximate pre-construction contours. Reclamation and final stabilization will be conducted as described in **Section 4**.

The service and access roads will also be constructed using conventional cut and fill earthmoving techniques. All roads will be graded to slope into the cut slope or crowned, allowing for drainage into the roadside ditch(s). The ditch(s) will provide containment for the surface run-off, directing it into sufficient roadside culverts with inlet protection consisting of armored sediment traps at the inlet side and rock armoring on the spillway outlet side, as well, rock check dams will be placed in the ditches aiding in reducing the flow velocity and allowing for sediment to settle out. Perimeter controls, such as wattles and earth berms, will be used along the toe slope of the fill slopes and will be used in addition to or alone when slope stabilization is not adequate. Roadside berms will provide an added safety feature, they will be compacted and consist of plowed road material.

Section above is in the OXY South SWMP. Do we want it in the North also?

Cascade Creek Common Plan of Development well pads and facilities are surrounded by the following Colorado Land Cover Classification Systems:

- Low Elevation Salt-Desert Scrub/Basin Big Sagebrush
- Pinyon-Juniper Woodland, Mountain/Wyoming Big Sagebrush Shrubland
- Mixed Mountain Shrubland including Oakbrush
- Spruce-Fir, including Mountain Meadows

A vegetation description for each Cascade Creek pad is provided in Tables 1 & 2. Vegetative cover surrounding Cascade Creek Common Plan of Development ranges from 30-85%.

Regional precipitation amounts vary from 10.7 inches per year in Palisade, Colorado to 14.8 inches in Collbran, Colorado (Western Regional Climate Center).

A Spill Prevention and Countermeasures Plan (SPCC) has been prepared for the Cascade Creek Common Plan of Development (Walsh, 2007). The SPCC plan will be updated as needed to incorporate new oil and gas facilities.

1. b Proposed Sequence for Major Activities

Natural gas exploration, development and production activities are currently underway within the Cascade Creek Common Plan of Development. For new disturbances, Best Management Practices (BMPs) will be installed prior to, during, and immediately following construction as practicable with consideration given to safety, access, and ground conditions (e.g. frozen ground) at the time of construction.

The development of natural gas wells is generally accomplished in three distinct work phases. The first phase is the Development (Construction/Drilling/Completion/Initial Reclamation), the second phase is the Production (Operation/Maintenance), and the third phase is the Abandonment and Final Reclamation. Each work phase is briefly discussed below.

Development (Construction/Drilling/Completion/Initial Reclamation)

The Development phase includes the following activities; road and well pad construction, well drilling, well completion, gas line installation, and pad area reclamation. The well pad will be constructed and graded with a gentle slope to drain surface water from the pad surface.

Initial pad reclamation is accomplished by backfilling the reserve pit, contouring disturbed soils to conform with the surrounding terrain, replacing stockpiled topsoil, seeding of disturbed soil areas in order to reestablish a cover vegetation, and construction of erosion and sediment control structures. The completion of a well (gas production) generally triggers a one-year time period in which the reclamation phase of work should be completed. A listing of approved seed mixtures per vegetation land cover classification system identification is provided in Table 3.

Production (Operation/Maintenance)

The production phase includes the operation and maintenance activities during natural gas production. Gas pipelines are installed during this phase of work. Typical well pad equipment includes a wellhead, a separation unit and one to several 210-400-barrel capacity aboveground storage tanks (ASTs) containing condensate or produced water. Smaller sized ASTs may contain lube oil, methanol, and triethylene glycol.

Reclamation activities during this phase include maintenance of revegetated areas and maintenance of the erosion and sediment control structures. Development of natural gas resources and associated construction activities will likely continue for the next 3 to 5 years. Natural gas wells in the Cascade Creek area are projected to produce for approximately 20 to 30 years.

Abandonment and Final Reclamation

When the natural gas production of a well is exhausted it will be abandoned. Upon well abandonment each borehole will be plugged, capped, and all surface equipment will be removed. Subsurface pipelines will be removed to specified locations and plugged. The pad

area will be reclaimed by contouring disturbed soils to conform to the surrounding terrain, by replacing the stockpiled topsoil, by seeding of disturbed soil areas in order to reestablish cover vegetation, and by construction of erosion and sediment control structures as needed.

Once stabilization is achieved, defined as uniform vegetative cover established with a density of at least 70 percent of pre-disturbance levels, a well pad may be removed from this SWMP for sediment controls. However, if petroleum hydrocarbons or other chemicals impact storm water as a result of industrial activities onsite, the well pad will maintain permit coverage and ensure SPCC plan BMPs are maintained.

1. c Estimates of Site Acreages

The total permitted area of the Cascade Creek Common Plan of Development is approximately 25,000 acres. The total disturbed area is approximately 697 acres.

1. d Soil Data and Erosion Potential

Runoff characteristics are based on site topography, soil type, and soil/vegetative cover. The soil types in this permitted area along with native vegetation land cover are described below in the Cascade Creek Soil Descriptions. The slopes range from 3% to steep rock outcroppings. Pre-disturbance ground cover varies from 30 to 85 percent. For specific pad percent ground cover information refer to Tables 1 & 2. Storm water runoff receiving waters include unnamed tributaries Conn Creek and Cascade Canyon. The ultimate receiving water is the Colorado River.

Cascade Creek Soil Descriptions

According to the NCRS, soil for the Cascade Creek Common Plan of Development consists of the following soil types:

1. DeBeque very channery loam: This soil is typically found on 5 to 20% slopes and in deep, well drained soil is on toe slopes, in narrow drainageways, and on alluvial fans and old stream terraces. It formed in colluvium and alluvium derived dominantly from the Green River shale formation. The native vegetation is mainly serviceberry, snowberry, grasses, forbs, and scattered Rocky Mountain Douglas Fir. Elevation is 5,800 to 7,500 ft. The surface layer is very dark grayish brown very channery loam about 4 inches thick. The next layer is brown very channery sandy loam about 3 inches thick. The underlying material to a depth of 60 inches or more is light brownish gray very channery sandy loam. Permeability is moderately rapid in the DeBeque soil. The available water capacity is low. Runoff is rapid and the hazard of water erosion is severe. The local roads rating class for DeBeque soil is somewhat limited because of the slope and frost action. The potential source of roadfill rating is good.

2. Happle very channery sandy loam: This soil can be found on 3 to 12 % percent slopes and are mainly on south-facing mountain side slopes. The native vegetation is mainly scattered Rocky Mountain Douglas-fir, Twoneedle Pinyon, Juniper, True Mountain Mahogany, Indian Ricegrass, and Wheat Grass. Elevation is 7,700 to 8,200 feet. Haploborolls are shallow to deep and are well drained. They formed in colluvium and residuum derived dominantly from calcareous sandstone. No single profile is typical of the Haploborolls, but a common profile is the survey area has a surface layer that is about 6 inches of dark grayish brown loam over 5 inches of dark grayish brown gravelly sandy clay loam. The upper part of the subsoil is brown very stony loam about 11 inches thick. The lower part is very pale brown very cobbly sandy clay loam about 10 inches thick. Sandstone bedrock is at a depth of about 32 inches. Permeability is moderate in the Happle soil. The available water capacity is low. Runoff is slow, and the hazard

of water erosion is severe. The local roads rating class for Happle soil is somewhat limited because of the slope and frost action. The potential source of roadfill rating is good.

3. Happle-Rock outcrop association: This soil can be found on 25 to 65% slopes and on side slopes and canyon rims. The native vegetation is mainly Sagebrush, grass, and forbs. Elevation is 6,200 to 7,200. The Happle soil is deep and well drained. It formed in colluvium derived dominantly from the Green River shale formation. Typically, the surface layer is light gray very channery sandy loam about 7 inches thick. The next part is light gray very channery sandy loam about 7 inches thick. The lower part of the substratum to a depth of 60 inches or more is light gray extreme channery coarse sandy loam. Permeability is moderate in the Happle soil. The available water capacity is low. Runoff is rapid, and the hazard of water erosion is severe. The local roads rating class for Happle soil is very limited because of the slope and frost action. The potential source of roadfill rating is poor due to the slope.

4. Parachute-Irigul-Rhone association: This soil is found on 25-50% slopes and on tops of mountains and ridges and on the crests and sides of hills. The native vegetation is mainly Gambel's Oak, Serviceberry, Sagebrush, and grasses. Elevation is 7,600 to 8,800 feet. The Irigul soil is shallow and well drained. It formed in residuum derived dominantly from sandstone or hard shale. Typically the surface layer is a very dark grayish brown loam about 10 inches thick. The next layer is dark grayish brown channery loam about 29 inches thick. The subsoil is brown very channery loam about 16 inches thick. Rippable, fractured siltstone is at a depth of about 55 inches. Permeability is moderate in the Irigul soil. The water capacity is very low. Runoff is rapid and the hazard of water erosion is very severe. Permeability is moderate in the Parachute soil. The available water capacity is very low. Runoff is rapid and the hazard of water erosion is very severe. The local roads rating class for Parachute soil is very limited because of the slope and frost action. The local roads rating class for Irigul soil is very limited because of the slope and depth to hard bedrock. The local roads rating class for Rhone soil is very limited because of the slope and frost action. The potential source of roadfill rating is poor due to the slope and the depth to bedrock.

5. Parachute-Rhone loams: This soil is found on 5 to 30 % slopes and on ridge crests, mountain sides, upland slopes, and side slopes. The native vegetation is composed mainly of various shrubs and grasses. The parachute soil is moderately deep and is well drained. Typically, the surface layer is grayish brown loam about 10 inches thick. The subsoil is brown very channery loam about 15 inches thick. Rippable, fractured siltstone is at a depth of about 25 inches. Permeability is moderate in the Parachute soil. The available water capacity is very low. Runoff is rapid and the hazard of water erosion is very severe. Permeability is moderate in the Rhone soil. The available water capacity also is moderate. Runoff is medium or rapid, and the hazard of water erosion is moderate to very severe. The local roads rating class for Parachute soil is very limited because of the slope and frost action. The local roads rating class for Rhone soil is very limited because of the slope and frost action. The potential source of roadfill rating is poor due to the slope and depth to bedrock. The roadfill rating for the Rhone soil is fair due to the slope and depth to bedrock.

6. Tosca channery loam: This soil is found on 25 to 80% slopes and is a deep, well drained soil on mountain side slopes and foot slopes. It formed in colluvium derived dominantly from Green River Shale. The native vegetation is mainly Serviceberry, Gambel's Oak, Snowberry, and grasses. Typically, the surface layer is dark grayish brown channery loam about 8 inches thick. The next layer is brown very channery loam about 7 inches thick. The lower part to a depth of 60 inches or more is very pale brown and light yellowish brown very channery loam. Permeability is moderate in the Tosca soil. The available water capacity is low. Runoff is rapid

and the hazard of water erosion is very severe. The local roads rating class for Tosca soil is very limited because of the slope and frost action. The potential source of roadfill rating is poor due to the slope.

7. Utso-Rock outcrop complex: This soil can be found on 40 to 90% slopes and is on side slopes. The native vegetation is mainly Rocky Mountain Douglas fir, Shrubs, and scattered grasses. The Utso soil is deep and well drained. It formed in colluvium derived dominantly from the Green River shale formation. Typically the surface layer is very dark grayish brown channery loam about 4 inches thick. The next layer is dark grayish brown very channery loam about 7 inches thick. The subsoil to a depth of 60 inches or more is grayish brown very channery loam. Permeability is moderate in the Utso soil. The available water capacity is low. Runoff is rapid and the hazard of water erosion is very severe. The local roads rating class for Utso soil is very limited because of the slope and frost action. The potential source of roadfill rating is poor due to the slope.

1. e Existing Vegetation Description

Cascade Creek Common Plan of Development well pads and facilities are surrounded by the following Colorado Land Cover Classification Systems:

Low Elevation Salt-Desert Scrub/Basin Big Sagebrush

Pinyon-Juniper Woodland, Mountain/Wyoming Big Sagebrush Shrubland

Mixed Mountain Shrubland including Oakbrush

Spruce-Fir, including Mountain Meadows

A vegetation description for each Cascade Creek pad is provided in Tables 1 & 2. Vegetative cover surrounding Cascade Creek Common Plan of Development ranges from 30-85%.

Regional precipitation amounts vary from 10.7 inches per year in Palisade, Colorado to 14.8 inches in Collbran, Colorado (Western Regional Climate Center).

Please refer to **Tables 1 & 2** for the existing vegetation descriptions

1. f Potential Pollution Sources

Due to numerous sites within the Cascade Creek Common Plan of Development, a list of locations of potential pollution sources would be too expansive and not comprehensive. For an accurate location and listing of potential pollutants please refer to the site specific inspection forms. The following paragraphs list the possible pollutants.

Potential pollution sources associated with construction sites and natural gas development include:

- Sediment resulting from erosion of soil stockpiles and other areas cleared of vegetation;
- Sediment discharges from vehicle tracking;
- Leakage of fuels and lubricants from equipment and spills from fueling;
- Trash and debris from clearing activities, construction materials, and workers and;
- Leakage or spills from storage tanks and process equipment associated with the natural gas development activities.

The most common source of pollution from pad and access road construction is sediment, which can be carried away from the work site with storm water runoff and impact the water

quality of a receiving stream. Clearing, grading, and otherwise altering previously undisturbed land can increase the rate of soil erosion over pre-disturbance rates.

Petroleum products can also be potential storm water pollutants. These products are used in construction activities to power or lubricate equipment and include: fuel, gear oil, hydraulic oil, brake fluid, and grease.

Debris from laydown areas, residue from equipment cleaning and maintenance, and solid waste generated from land clearing operations and human activity (trees, brush, paper, trash, etc.) present other potential pollution sources within the construction site. Additionally, one or more facilities may contain construction supplies such as various sized pipe, culverts, metal sheds, empty tanks, drums and vessels, fencing and stairs.

Construction of new production facilities may require the use of concrete. Concrete wash out waters will be managed to prevent them from reaching waters of the state. Typically concrete wash out waters will be diverted to the well pad flare pit or other type of earthen impoundment to capture and evaporate wash out water. These will be listed on the site specific information if they occur.

Loading and unloading of condensate and produced water from above ground storage tanks are common and regular activities within the Cascade Creek. Spills and or tank over flows can contaminate storm water runoff.

Magnesium chloride solution or other chemical dust suppressants may be applied during the summer to unpaved roads to order to reduce fugitive dust generation. Magnesium chloride solution is used in the winter for roadway deicing and in the summer for dust suppression by county and state government entities. The solution is typically delivered to the site by contractors in Department of Transportation (DOT) approved tanker trailers and generally is quickly applied to the road surface. Occasionally, depending on work site conditions, the tanker trailers may be staged along the road until ready for application (typically no longer than overnight).

Spills or leaks from potential sources are described in the SPCC plan; the SPCC plan can be located at the Conn Creek Facility. Response to certain events may require specialized training due to health and safety concerns. For a list of down-hole chemicals/MSDS inventory used during development activities please refer to **Appendix B**.

1. g Anticipated allowable non-stormwater discharges

All discharges covered by this permit will be composed of entirely stormwater unless they meet the following qualifications. Discharges other than stormwater and those mentioned below will be covered by a separate permit. Discharges resulting from emergency fire fighting activities, uncontaminated springs, and irrigation return flow that are combined with stormwater can be discharged provided the non-stormwater component is identified in the SWMP.

Discharges to the ground from concrete washouts and the washing of concrete truck chutes can be allowed if the source is identified in this SWMP, BMPs are in noted in the SWMP and in place to prevent the contamination of groundwater, and these discharges do not leave the site.

Discharges to the ground of water from construction dewatering activities are covered by this permit provided the source is groundwater and/or groundwater combined with stormwater that is not contaminated exceeding the state threshold limits, the source is identified in the SWMP, BMPs are included the SWMP, and the discharges do not leave the site as runoff.

At this time this is not anticipated but may be added to the SWMP if encountered.

1. h Receiving waters

For a list of the receiving waters for the Cascade Creek Common Plan of Development, please refer to **Table 4-OXY Drainages** spreadsheet.

2 SITE MAP

For a copy of the overall site map, please refer to Appendix F

2. a Construction Site Boundaries

For an accurate description of the construction site boundaries, please refer to the site specific maps for each location. The boundaries are too numerous to be contained in one portion of the SWMP and must described for each location.

2. b Areas of Ground Disturbance

For an accurate description of the areas of disturbance, please refer to the site specific maps for each location. The areas are too numerous to be contained in one portion of the SWMP and must described for each location.

2. c Areas of cut and fill

For an accurate description of the areas of cut and fill, please refer to the site specific maps for each location. The areas are too numerous to be contained in one portion of the SWMP and must described for each location.

2. d Storage Areas

For an accurate description of the storage areas, please refer to the site specific maps for each location. The areas are too numerous to be contained in one portion of the SWMP and must described for each location.

2. e Location of Asphalt and Concrete Batch Plants

There will be no asphalt or concrete batch plants located within the permitted area.

2. f Locations of Structural BMPs

For an accurate description of the location of structural BMPs, please refer to the site specific maps for each location. The BMPs are too numerous to be contained in one portion of the SWMP and must described for each location. An evaluation of the unique site specific features will be done and specific BMPs for these situations will be noted on a site specific narrative.

2. g Locations of Non-Structural BMPs

For an accurate description of the location of non-structural BMPs, please refer to the site specific maps for each location. The BMPs are too numerous to be contained in one portion of the SWMP and must described for each location. An evaluation of the unique site specific features will be done and specific BMPs for these situations will be noted on a site specific narrative.

2. h Locations of Springs, Wetlands and Other Surface Waters

For an accurate description of the location of springs, wetlands, and other surface waters, please refer to the site specific maps for each location. The locations are too numerous to be contained in one portion of the SWMP and must be described for each location.

3 STORMWATER MANAGEMENT CONTROLS

3. a SWMP Administrator

The SWMP Administrator for the Cascade Creek Common Plan of Development is:

Mr. Chris Clark

Regulatory Coordinator

Email address: Chris_Clark@oxy .com

760 Horizon Drive, Suite 101

Grand Junction, Colorado 81506

Phone: 970-263-3628

3.b Identification of Potential pollutant Sources

3.b.1 All disturbed and stored soils will be evaluated for erosion potential and potential to contribute to stormwater pollution and BMPs to prevent such occurrence will be implemented on a case by case basis.

3.b.2 Vehicle tracking of sediments will be evaluated for erosion and pollution potential. BMPs will be chosen according to the potentials on a case by case basis.

3.b.3 Management of contaminated soils will be done by containment immediately and disposing of them at an appropriate disposal facility.

3.b.4 Loading and unloading operations will be evaluated and identified for potential for pollution. The following is the procedure for dealing with liquid loading and unloading procedures;

Oxy/Cascade Creek

Water Handling Procedure:

* Authorization for Cascade Creek on-lease water movement shall be approved by OXY Plant Operator, Production Technician or Production Coordinator

* Point of origin and discharge shall be identified prior to the movement of any water (produced, flowback or fresh).

* Discharge valve at point of discharge shall be verified in open position and secured in open position.

* Operator shall drive distribution system route verifying all risers are blind flanged (tapped w/needle valve) and valves are properly secured open.

* Operator shall be present at discharge point before transfer pumps are started and engaged.

* Operator shall inspect transfer pump according to check-list to identify and correct any operational issues.

* Point of origin operator shall notify point of discharge operator of intent to engage and pump water.

* Point of origin operator shall monitor rate and pressure maintaining acceptable limits within the design capabilities of distribution system.

- * Point of discharge operator shall monitor discharge into permitted water storage pond.
- * Point of discharge operator shall then drive distribution route and inspect for leaks or spills.
- * Upon completion of water movement, lines shall be purged of all liquids to prevent freezing, pumps shall be drained and properly secured, and all valves shall be secured properly.

Spills will be handled according to the SPCC guidelines.

3.b.5 Outdoor storage activities will be evaluated for potential to pollute StormWater runoff. Appropriate BMPs will be implemented on a case by case basis. Containment and prevention of contact with stormwater will be achieved by keeping materials with potential for pollution covered or enclosed in containers or packaging.

3.b.6 Vehicle and equipment maintenance and fueling procedures require the operators to ensure that no fluids or materials are spilled. If they are spilled, they will be immediately contained and disposed of at an appropriate disposal facility.

3.b.7 Significant dust or particulate generating processes will be evaluated and regulated by the application of water to eliminate possible wind erosion or transport.

3.b.8 Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, & oils will be very infrequent. When applying pesticides or herbicides, wind and moisture conditions will be evaluated and if either are found to be present and could possibly lead to contamination, such procedures will be delayed and attempted again when conditions are conducive to application without elevated pollution possibilities.

3.b.9 On-site waste management practices (waste piles, liquid wastes, dumpsters, etc.) will be enacted on all sites. Trash receptacles will be located on all active sites. Good housekeeping principles will be enacted throughout the entire permitted area. Disposal will be by contractors with appropriate handling equipment.

3.b.10 Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment will be infrequent within the permitted area. These procedures are covered under the permit. If washing of concrete trucks and equipment takes place, the water will be contained in an earthen basin. The location will be noted on site specific maps.

3.b.11 Dedicated asphalt and concrete batch plants will not be present within the permitted area.

3.b.12 Non-industrial waste sources such as worker trash and portable toilets will be contained in receptacles designed for the specific purpose. These will be disposed of by contractors with specially designed equipment and dispose of according to local requirements at appropriate facilities.

3.b.13 Other areas or procedures where potential spills can occur will be evaluated on a case by case basis and BMP's will be implemented according to the specific potential for pollution.

3.c BMPs for StormWater Pollution Prevention

3.c.1 Structural Practices

The description of structural practices available and/or implemented can be found in the BMP manual. The location of structural BMPs will be found in the site specific maps.

3.c.2 Non-Structural Practices

The description of non-structural BMPs available and/or implemented will be found in the BMP manual. The location of non-structural practices will be found in the site specific maps.

3.c.3 Phased BMP installation

For a list of phased BMP installations, please refer to **Figure 2**.

3.c.4 Materials Handling and Spill Prevention

Fuels and Materials Management

Petroleum products which may be present at the construction site include: gasoline, diesel fuel, lubricant oils, hydraulic oils, used oils, and solvents. Gasoline and diesel fuel will be stored in portable storage tanks with secondary containment. Lubricant, hydraulic, and miscellaneous oils and solvents will be stored in 55-gallon or smaller containers.

Pollutants from petroleum products used during construction activities adhere easily to soil particles and other surfaces. In case of a spill or leak, soils contaminated with petroleum products will be contained and removed to a proper disposal site. Proposed soil erosion and sediment control practices will aid in retention of spills or leaks. Use of secondary containment and drip pans will reduce the likelihood of spills or leaks contacting the ground. Proposed maintenance and safe storage practices will reduce the chance of petroleum products contaminating the road site. Oily wastes such as crankcase oil, cans, rags, and paper containing oils will be placed in proper receptacles and disposed of or recycled. An additional source of petroleum contamination is leaks from equipment and vehicles. Routine daily inspections will be conducted to identify leaks and initiate corrective actions, if needed.

The following guidelines for storing and managing petroleum products will be used:

- All product containers will be clearly labeled.
- Drums will be kept off the ground within secondary containment and stored under cover if needed.
- Fuel tanks will be stored within secondary containment.
- Lids of drummed materials will be securely fastened.
- Emergency spill response procedures will be available on-site. Persons trained in handling spills will be on call at all times.
- Spill clean up and containment materials (absorbent, shovels, etc.) will be easily accessible. Spills will be immediately cleaned up and contaminated materials will be properly stored on site until they can be disposed of in accordance with applicable regulations.
- Storage areas and containers will be regularly monitored for leaks and repaired or replaced as necessary. Contractors and subcontractors should be reminded about proper storage, handling and transferring of petroleum products or other hazardous materials during safety meetings.

Oxy's Health and Environmental Regulatory Advisor (HES) will coordinate agencies reporting and statements. All spills and releases of exploration and production waste or produced fluid exceeding 5 barrels (210 gallons) including those contained within unlined berms, shall be reported in writing on the COGCC Spill/Release Report Form 19 within 10 days of discovery of the spill.

All spills/releases that exceed 20 barrels (840 gallons) of exploration and production liquids/waste shall be verbally reported to the COGCC at (303) 894-2100 within 24 hours of discovery.

Spills or releases of any size that impact or threaten to impact any waters of the state, residence or occupied structure, livestock or public byway, shall be verbally reported to the COGCC as soon as practical after discovery (COGCC Rule 906). If the spill may reach waters of the state

(which includes surface water, ground water and dry gullies or storm sewers leading to surface water), it must also be reported immediately to the Colorado Department of Public Health and Environment (CDPHE) at 1-877-518-5608.

Spills or releases of more than 25 gallons of refined petroleum crude oil products such as gasoline, diesel fuel, oil, or derivatives of mineral, animal or vegetable oil shall be reported to the state of Colorado Division of Oil and Public Safety at (303) 318-8547 within 24 hours.

A hazardous substance release in any amount which enters or threatens to enter waters of the state shall be reported to Colorado Department of Public Health & Environment (CDPHE). All spills, leaks, or overflows that result in the discharge of pollutants will be documented.

Other Chemicals Products Management

Additional materials will be used and stored on site for use in construction. These materials will be stored appropriately and managed to minimize spills and leaks. Storage areas will be regularly inspected and any minor spills or leaks will be cleaned up immediately. Contaminated material will be contained and disposed of at an appropriate facility capable of disposing of the materials according to local regulations.

Materials Management

The construction contractor will maintain a laydown or staging area for equipment and materials storage on site. These areas will be maintained with good housekeeping and will be inspected on a regular basis for spills, leaks, and potential of materials commingling with storm water runoff. Any contaminated materials will be contained and disposed of at an appropriate facility capable of disposing of the materials according to local regulations.

3.c.5 Dedicated Concrete or Asphalt Batch Plants

There will be no dedicated Concrete or Asphalt batch plants within the permitted area. This SWMP will be amended if this changes in the future.

3.c.6 Vehicle Tracking Control

Vehicle tracking will be minimized by the construction of roads and travel areas by good engineering principles. Roads will be properly graded to control runoff and erosion. Road surfaces will be upgraded by the addition of gravel or roadbase being placed on the roadway surface. BMPs will be installed along roadways to control runoff and sediment. When conditions exist where the roadway is being damaged by traffic and the erosion potential is severely increased, OXY may decide to shutdown access to that section or sections of road in order to reduce or eliminate the potential of erosion or discharge. These sites will be noted in the SWMP and the Admin log.

3.c.7 Waste Management and Disposal including Concrete Washout

Waste Management and Disposal

Well pad construction and drilling will generate various other wastes during the course of construction (please refer to the SPCC plan & the Waste Management Plan (WMP). Other wastes may include the following:

- Sagebrush, shrubs and trees from clearing operations;
- Trash and debris from construction materials and workers;
- Drill cuttings, drilling fluids; and
- Sanitary sewage.

Each of these wastes will be managed so as to not contribute to storm water pollution. Construction trash and debris will be collected in containers and hauled off-site for disposal in suitable landfills. Sanitary waste will be containerized in portable toilets or other storage tanks with waste materials regularly pumped and transported off-site for disposal at approved facilities. Drill cuttings and fluids will be contained and disposed of at appropriate facilities designed for this specific purpose.

3.c.8 Groundwater and Stormwater Dewatering

Stormwater runoff will be separated from groundwater and dewatering by diversion and grading. The two will not be allowed to come in contact with each other. This is not anticipated at this time. If in the future dewatering of any kind takes place, the SWMP will be amended to reflect the changes.

If shallow groundwater is encountered during the excavating or trenching activities and requires de-watering to complete the work, or if process water used to hydrostatically test pipelines or equipment and the water is to be discharged, OXY will need to obtain a separate Temporary Discharge Permit from the WQCD. A Temporary Discharge Permit is required for these types of waste water discharges where it may be reasonably expected to reach waters of the State. All groundwater discharges will adhere to the requirements of Part I.D.3.d. The source will be identified in the SWMP. Discharges will not leave the site.

For the installation and implementation details and specifications associated with all BMPs, please refer to the BMP manual.

4 FINAL STABILIZATION AND LONG TERM STORMWATER MANAGEMENT

Areas which have been disturbed are considered to be stabilized when a uniform vegetative cover with a density of 70 percent of the pre-disturbance levels has been established or when an equivalent permanent, physical erosion reduction method is in-place. The disturbed areas will be seeded and mulched for final stabilization. **Table 3** contains state approved seed mixtures and distribution rates for the Cascade Creek. Typical Pure Live Seed (PLS) application rates are recommended to be doubled if seeding is performed by hydroseed or broadcasting. Seed mixtures and application rates are also specified in Application to Drill documents and are based upon several factors including facility and well pad surrounding vegetation, soil types, elevation and surface relief.

Areas not used for facilities, access roads, materials storage yards, or other work areas will be stabilized with vegetation. Areas that are stabilized with vegetation will be considered to have achieved final stabilization when a uniform stand of vegetation with a density of at least 70 percent of the pre-disturbance has been established. Sprayed on mulches and other slope stabilization materials may be used in combination with seeding techniques in select areas to promote and establish surface vegetation cover. Other areas which may include facilities, access roads, materials storage yards, and other work areas will be stabilized with the use of permanent, physical erosion reduction methods which include, but are not limited to:

- Surface hardening – covering of the soil surface with hardened products such as concrete or asphalt pavement.
- Surface covering – covering of the surface soil with structure that inhibits contact of precipitation with the soil surface which is generally considered to be placement of a structure (building or tank) over the soil surface.

- Gravel surfacing – gravel surfacing will be applied in areas such as access roads, materials storage yards, and other work surfaces. Some gravel may be lost due to erosion from intense precipitation events or due to vehicle traffic. Gravel surfaces will be periodically inspected to determine the need for gravel replacement. Gravel surfaces will be replaced or repaired (through grading) when inspection reveals that the gravel surface is no longer effectively covering the soil surface.

5 INSPECTION AND MAINTENANCE

To meet requirements of Storm Water General Permit No. COR-038414, inspection and maintenance of erosion and sediment controls must occur during the construction project. Continued inspection and maintenance is required for specific structures after construction is completed. A complete list of active inspection locations, site diagrams and site specific storm water BMPs are provided in the inspection report book kept with the SWMP.

Inspections will occur at least once every 14 calendar days and after a precipitation event or snowmelt events that cause surface erosion.

The inspection of stormwater BMPs serves as a preventative maintenance plan for the control devices and practices designed to prevent and minimize the pollution of state waters.

The inspections procedures will document the following items;

- 1) The inspection date;
- 2) Name(s) and title(s) of personnel making the inspection;
- 3) Location(s) of discharges of sediment or other pollutants from the site;
- 4) Location(s) of BMPs that need to be maintained;
- 5) Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
- 6) Location(s) where additional BMPs are needed that were not in place at the time of inspection;
- 7) Deviations from the minimum inspection schedule as provided in Section C.6.a of the permit;
- 8) Description of corrective action for items 3, 4, 5, and 6, above, dates corrective action(s) taken, and measures taken to prevent future violations, including requisite changes to the SWMP, as necessary; and
- 9) After adequate corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

Permanently stabilized areas will be inspected at least once per month.

A log of inspections will be completed and maintained at the Conn Creek Facility, and the Colorado office for a minimum of three years.

Inspections are not required for disturbed areas when snow cover exists over the entire site for an extended period as long as melting conditions do not exist. Part I.D.6(a)(3)

- Snow cover conditions where there is no risk of surface erosion can exist at high elevations within the Colorado mountains during some periods of the year. It is not necessary for inspections to be conducted during these periods. (Taken from Public response 5/31/07)

Water quality will be visually assessed for all receiving streams and discharge areas during each inspection if present.

Disturbed areas and material storage areas that are exposed to precipitation will be inspected for evidence of pollutants entering nearby drainages.

Check dams, wattles, and other BMPs will be inspected for evidence of deterioration, undercutting, and build up of sediment. Sediment will be removed when it has built up one-third to one-half the height of the hay bales or wattles.

Roads used for vehicle access will be inspected for evidence of off-site sediment transport.

For maintenance procedures of BMPs, please refer to the BMP manual. This will also show criteria for maintenance.

The SWMP will be modified as necessary whenever there is a change in design, construction or operation that changes the potential for pollutant discharge to waters of the state.

An inspection report summarizing the scope of the inspection, the name of the person conducting the inspection, date of inspection, and observations relating to the implementation will be prepared. An inspection report is provided in Appendix D.

Actions taken to modify storm water control measures will be recorded and maintained with the SWMP.

If no deficiencies are found during the inspection, the report contains a certification statement that the site is in compliance with the SWMP and the General Permit.

Personnel performing facility inspections such as access roads, well pads or other operational facilities will record site conditions on the Storm Water Field Inspection Report form in Appendix D. When deficiencies are discovered, the OXY Storm Water Administrator will be contacted and will direct designated subcontractors to perform BMP maintenance or replacement. Maintenance will include prompt adjustments and repairs to erosion and sediment control structures that are found to be performing inadequately or deteriorating. Signs of rill or gully surface erosion shall be immediately repaired. The OXY Storm Water Administrator has the authority and will direct subcontractors to install new and or additional storm water control BMPs as needed.

Inspection to deficiency repairs signature requirements procedure

- 1) Inspection will be conducted noting deficiencies.
- 2) Inspection report will be generated.
- 3) Reports to be placed into SWMP inspections records book.
- 4) Inspection deficiencies will be input to excel spreadsheet format and sent to OXY reps, Greg Gipp and John Ocana.
- 5) Deficiencies list will be prioritized by John or Greg.
- 6) Data will be input to central location.
- 7) Distribution of deficiencies list to subcontractors in charge of repair and maintenance.
- 8) Subcontractors will take corrective action on deficiencies.
- 9) Subcontractors will place initials on deficiencies list in central location, stating repairs have been made and site is in compliance.
- 10) Bi-weekly report of deficiencies list to take place at the end of two week segment.
- 11) Printout of bi-weekly update to be placed into SWMP inspections book.

This section retired on 1NOV09.

New Process for Inspections and Records Keeping (added 1Nov09)

- 1) Linda Gordon of Road Runner conducts 14 day and Monthly inspections.
- 2) Post precip event inspections will be conducted by either OXY personnel or contract personnel.
- 3) Post precip event inspections will be recorded on area wide inspection forms, listing each individual site. Two columns on the inspection form denote OK and N/M, standing for Needs Maintenance. If a site is in compliance and no issues are present at a site, the OK box will be checked for the site. If maintenance is needed, the discharge or deficiency will be listed in the comments box.
- 4) **Resolve issues with post precip form deficiencies.**
- 5) Completed inspection forms are kept in the field books in the field offices.
- 6) Inspections forms are also scanned and sent to Olsson Associates for additional record keeping and updating of the SWMP.
- 7) Quarterly Auditing of StormWater Management Plan, related inspection documents, and quarterly field inspections by auditors.
- 8) Quarterly audit reports to SWMP administrator.

Figures

Figure 1
Permitted Area Map

Figure 2
BMP Selection Guidelines

Clearing Stage	Production Stage	Reclamation Stage
Pads	Pads	Pads
Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch	Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch Gravel Surfacing Berm Check Dams Drainage Dip Erosion Control Blanket Slope Drain Slope Stabilization	Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch Gravel Surfacing Berm Check Dams Drainage Dip Erosion Control Blanket Mulching Slope Stabilization
Pipelines	Pipelines	Pipelines
Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch	Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch Check Dams Culverts	Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch Check Dams Culverts

	Culvert Protection Drainage Dip Revegetation Slope Stabilization	Culvert Protection Drainage Dip Erosion Control Blanket Mulching Revegetation Slope Stabilization
Access Roads	Access Roads	Access Roads
Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch Gravel Surfacing Roadside Ditches Turnouts Stabilized Entrance	Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch Gravel Surfacing Check Dams Berm Culverts Culvert Protection Drainage Dip Erosion Control Blanket Retaining Wall Geo-Ridges Revegetation Roadside Ditches Turnouts Slope Drain Stabilized Entrance Slope Stabilization	Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence Straw Bale Barrier Surface Roughening Terracing Vegetative Buffer Water Bar Diversion Ditch Gravel Surfacing Check Dams Berm Culverts Culvert Protection Drainage Dip Erosion Control Blanket Mulching Revegetation Roadside Ditches Turnouts Stabilized Entrance Slope Stabilization
Facilities	Facilities	Facilities
Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence	Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence	Filter Berm Land Grading Level Spreader Wattles Riprap Sediment Trap Silt Fence

Straw Bale Barrier	Straw Bale Barrier	Straw Bale Barrier
Surface Roughening	Surface Roughening	Surface Roughening
Terracing	Terracing	Terracing
Vegetative Buffer	Vegetative Buffer	Vegetative Buffer
Water	Water	Water
Bar	Bar	Bar
Diversion Ditch	Diversion Ditch	Diversion Ditch
Gravel Surfacing	Gravel Surfacing	Gravel Surfacing
	Berm	Berm
	Check Dams	Check Dams
	Drainage Dip	Drainage Dip
	Erosion Control Blanket	Erosion Control Blanket
	Revegetation	Mulching
	Slope Drain	Revegetation
	Slope Stabilization	Slope Stabilization

Appendix A
Storm Water General Permit No. COR-038414

STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S. Laboratory Services Division
Denver, Colorado 80246-1530 8100 Lowry Blvd.
Phone (303) 692-2000 Denver, Colorado 80230-6928
TDD Line (303) 691-7700 (303) 692-3090
Located in Glendale, Colorado
<http://www.cdphe.state.co.us>



Colorado Department
of Public Health
and Environment

June 20, 2007

Heidi Reed, Sr. EHS Advisor
Oxy USA WTP LP, Attn Bill Heller, Ops Mgr.
2754 Compass Drive Ste. 170
Grand Junction, CO 81506
970/263-3609

RE: Final Permit, Colorado Discharge Permit System – Stormwater
Certification No: COR-038414
Cascade Creek Development
Garfield County

Local Contact: Joanna Fry,
970/ 263-7800

Dear Sir or Madam:

Enclosed please find a copy of the new permit and certification which have been re-issued to you under the Colorado Water Quality Control Act.

Your old permit expires on June 30, 2007. This is a renewal to the permit, and replaces the old one. See page 2 of the Rationale (the pages in italics) for a summary of the changes to the permit.

Your Certification under the permit requires that specific actions be performed at designated times. You are legally obligated to comply with all terms and conditions of the permit.

Please read the permit and certification. If you have any questions please visit our website at : www.cdphe.state.co.us/wq/permitsunit/stormwater or contact Matt Czahor at (303) 692-3517.

Sincerely,

Kathryn Dolan
Stormwater Program Coordinator
Permits Unit
WATER QUALITY CONTROL DIVISION
xc: Regional Council of Governments
Local County Health Department
District Engineer, Technical Services, WQCD
Permit File

Appendix B

Down-Hole Chemicals/MSDS Inventory

Down-Hole Chemical List

MSDS Product Name	Product Use/Chemical Description	Chemical Manufacturer
Frac-cide - 1000	Biocide	BJ Chemical Services Company
High Perm CLB-LT	Encapsulated oxidizing breaker	BJ Services Company
Hih Perm CRB	Encapsulated persulfate salt	BJ Services Company
Hih Perm CRE	Hemicellulase enzyme encapsulated	BJ Services Company
GBW-21	Breaker - water	BJ Services Company
GBW-12CD	Hemicellulase enzyme	BJ Services Company
S-8C Sand 100 Mesh	Silica Sand 100 mesh	BJ Services Company
XLW-22C	Crosslinker - proprietary blend	BJ Services Company
GS-1A	Gel stabilizer, sodium thiosulfate anhydrous	BJ Services Company
FRW-14	Friction reducer, polyacrylamide	BJ Services Company
GBW-5	Breaker - water, ammonium persulfate	BJ Services Company
Flo-back 30	Surface tension reducer, surfactant	BJ Services Company
Clay Treat -3C	Clay Control, ammonium compound & polymers	BJ Services Company
Hydrochloric acid (HCL)	Acid, inorganic acid	BJ Services Company
Ferrotrol 300L	Iron control, citric acid solution	BJ Services Company
BC-3	Breaker catalyst	BJ Services Company
GW-45LE	Gellant - water	BJ Services Company
XLW-14	Crosslinker, blend of triethanolamine & n-propanol	BJ Services Company
Inflo-150	Surface tension, silicones, fluorocarbon surfactants, alkanolamines, fatty alcohol in water and methanol	BJ Services Company
BF-9L	Buffer, proprietary blend of inorganic salts	BJ Services Company
NE-940	Non-emulsifier, a blend of polyglycols in alcohol	BJ Services Company
CI-25	Inhibitor - acid, a blend of quaternary salts, alcohols, formamide, and ethoxylated nonylphenols	BJ Services Company
Magnacide 575	Microbiocide	Baker Hughes
Clayfix II - Water	Additive, alkylated quaternary chloride	Halliburton
CAT-3 Activator	Activator, EDTA copper chelate	Halliburton
BA-40L	Buffer, potassium carbonate	Halliburton
CL-23 Crosslinker	Crosslinker, ammonium chloride, zirconium complex	Halliburton
Clayfix II Material	Additive, organic salt, alkylated quaternary chloride	Halliburton
10% Hydrochloric acid	Acid, inorganic acid	Halliburton
7.5% Hydrochloric acid	Acid, inorganic acid	Halliburton
15% Hydrochloric acid	Acid, inorganic acid	Halliburton
LGC - VI ZD	Liquid gel concentrate, guar gum synthetic mineral oil blend	Halliburton
Losurf-300 Nonionic Surfactant	Surfactant, light aromatic solvent	Halliburton
CL-37 Crosslinker	Crosslinker, glycerine, propanol, triethanolamine zirconate	Halliburton
HAI-404M	Corrosion inhibitor, chloromethylnaphthalene	Halliburton

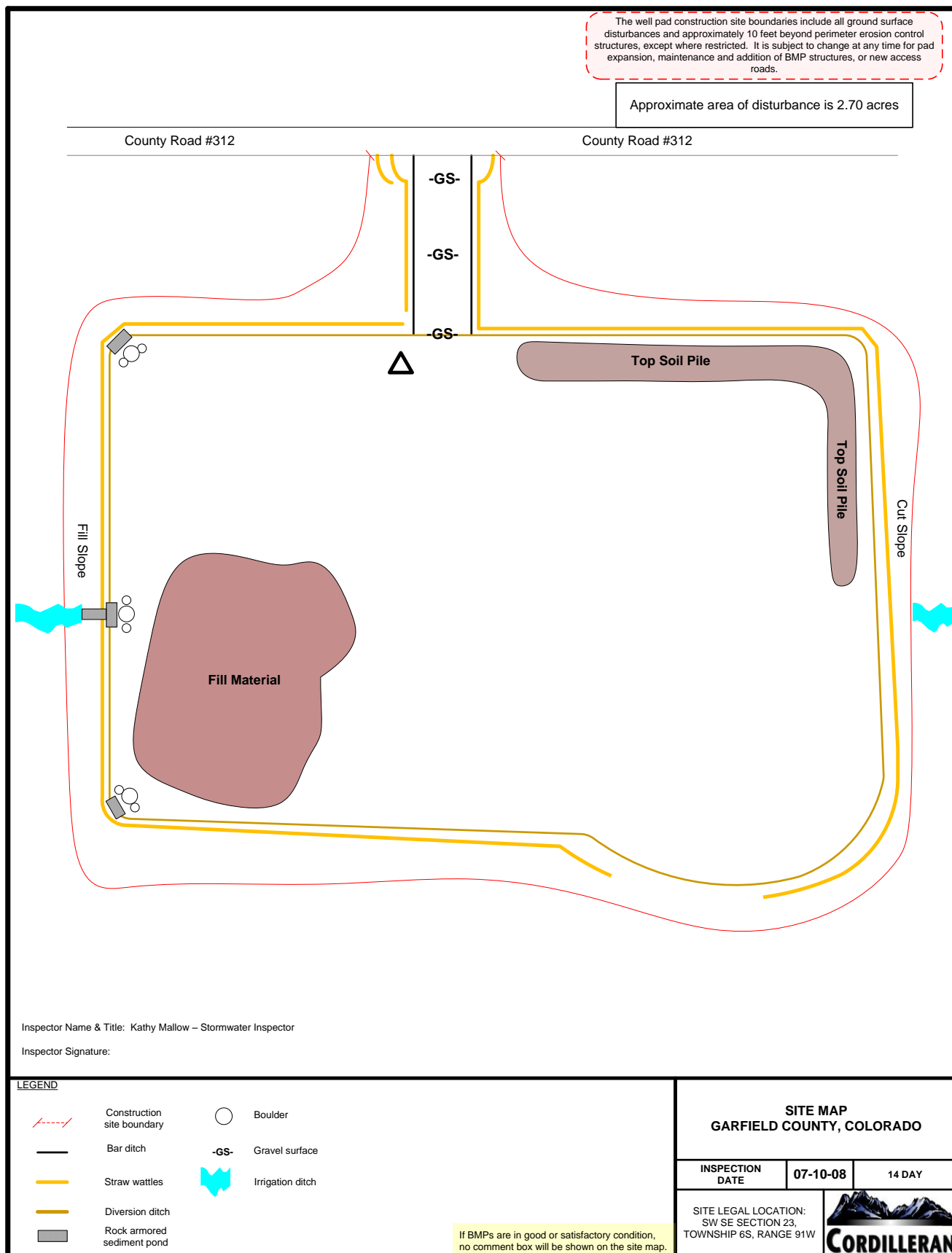
Losurf-300M	Surfactant, 1,2,4 Trimethylbenzene	Halliburton
CAT-4	Activator, diethylenetriamine	Halliburton
FR-56	Friction reducer, hydrotreated light petroleum distillate	Halliburton
GasPerm 1000	Surfactant, isopropanol	Halliburton
CAT-4 Winter Blend	Activator, diethylenetriamine & methanol	Halliburton
Vicon NF Breaker	Breaker, chlorous acid, sodium salt	Halliburton
HAI-404	Corrosion inhibitor, chloromethylnaphthalene quinoline quaternary amine	Halliburton

Appendix C
StormWater Field Inspection Report

See Site Maps for Inspection format

Appendix D

Site Map



Tables

Table 1
Cascade Creek Vegetation Descriptions

Facility Name	Vegetation Description Lower Cascade Creek	Percent Ground Cover
617-24	Grasses, Scrub Oak, Serviceberry	85%
620-1	Grasses, Scrub Brush, Service Berry	65%
620-21	Grasses, Scrub Oak	50%
620-24-43	Grasses, Sagebrush, Scrub Oak, Serviceberry	65%
620-33	Grasses, Sagebrush, Scrub Oak, Serviceberry	60%
620-43-32	Grasses, Sagebrush, Scrub Oak, Serviceberry	65%
629-2	Grasses, Sagebrush, Serviceberry	70%
629-23-42	Grasses, Sagebrush, Serviceberry	65%
629-31-11	Grasses, Sagebrush, Scrub Oak, Serviceberry	70%
632-13-22	Grasses, Sagebrush	65%
632-21-41	Grasses, Sagebrush Scrub Oak, Serviceberry	68%
697-16D	Grasses, Sagebrush, Scrub Oak, Service Berry	60%
697-17-33	Grasses, Scrub Oak, Serviceberry	60%
697-20-28	Grasses, Scrub Oak, Serviceberry	60%
705-22-43	Grasses, Sagebrush	60%
708-11	Grasses, Sagebrush	80%
797-05-36	Grasses, Sagebrush, Scrub Oak, Serviceberry	70%
797-05-52	Grasses, Sagebrush	75%
797-06	Grasses, Sagebrush, Scrub Oak, Serviceberry	75%
797-08-19D	Grasses, Sagebrush	80%
797-08-51D	Grasses, Sagebrush	80%
797-09-12	Grasses, Greasewood, Pinyon Pine, Sagebrush, Salt Brush, Scrub Oak	75%
Pond 10	Grasses, Sagebrush Scrub Oak, Serviceberry	70%
Shell 3B	Grasses, Sagebrush, Scrub Oak, Serviceberry	70%
CC I GTF	Grasses, Sagebrush, Scrub Oak, Serviceberry	55%

CWHF/ 629-1	Grasses, Sagebrush, Scrub Oak, Serviceberry	70%
CC II Control Facility	Grasses, Sagebrush	70%
CC II CF Control Building	Grasses, Sagebrush	70%
Logan Trail 28-10	Grasses, Sagebrush	70%
Cascade Canyon Access Road	Grasses, Sagebrush, Serviceberry	60%

Cascade Creek Vegetation Descriptions

Table 2

Facility Name	Vegetation Description Upper Cascade Creek	Percent Ground Cover
Fed 23-15	Grasses, Sagebrush, Scrub Oak Serviceberry	80%
603-23-32	Aspen, Grasses, Scrub Oak	70%
604-1	Grasses, Scrub Oak, Serviceberry	70%
604-11	Grasses, Rabbitbrush	70%
604-12-13	Grasses, Rabbitbrush, Sagebrush, Scrub Oak, Serviceberry	75%
604-41-32	Aspen, Grasses, Sagebrush, Scrub Oak	70%
604-44/ Pond 3	Aspen, Grasses, Sagebrush	70%
605-1	Grasses	70%
605-2	Aspen, Grasses, Rabbitbrush, Sagebrush, Serviceberry, Scrub Oak	75%
605-13-22	Grasses, Sagebrush, Scrub Oak, Serviceberry	75%
605-23	Aspen, Grasses, Sagebrush, Scrub Oak, Serviceberry	75%
608-41	Aspen, Grasses, Rabbitbrush, Sagebrush, Scrub Oak, Serviceberry	70%
608-43-31/ Pond 5	Aspen, Grasses, Rabbitbrush, Scrub Oak, Serviceberry	85%
609-1	Grasses, Sagebrush, Scrub Oak, Serviceberry,	70%
609-2/ Pond 4	Grasses	65%
609-14	Grasses, Scrub Oak	75%

Facility Name	Vegetation Description Upper Cascade Creek Continued...	Percent Ground Cover
609-33	Aspen, Grasses, Scrub Oak	65%
610-21-41/ Pond 2	Grasses, Scrub Oak	75%
610-22-43	Aspen, Grasses, Scrub Oak	80%
610-24-43	Aspen, Grasses, Scrub Oak	85%
616-21-32	Aspen, Rabbitbrush, Sagebrush, Serviceberry	80%
617-41/ Pond 9	Grasses, Scrub Oak, Serviceberry	50%
697-08-53	Grasses, Rabbitbrush, Sagebrush, Scrub Oak, Serviceberry	65%
697-09-60	Grasses, Sagebrush, Scrub Oak, Serviceberry	80%
697-15-01	Grasses, Sagebrush, Scrub Oak	80%
697-15-23	Aspen, Grasses, Scrub Oak	80%
697-15-54/ Pond 1	Grasses, Scrub Oak	75%
697-16-28	Grasses, Sagebrush, Scrub Oak, Serviceberry	75%
697-16A	Sagebrush, Scrub Oak, Serviceberry	75%
697-16-42	Grasses, Sagebrush, Scrub Oak, Serviceberry	80%
796-18-61	Sagebrush, Scrub Oak, Serviceberry	75%
796-19C	Grasses, Sagebrush	70%
Shell 797-10C	Grasses, Sagebrush, Scrub Oak	65%
797-14-01D	Grasses, Sagebrush, Scrub Oak	70%
797-22A	Grasses, Sagebrush, Scrub Oak	75%
797-23-16	Aspen, Grasses, Scrub Oak	90%
797-23-52	Grasses, Sagebrush, Scrub Oak	75%
797-24-47D (TA)	Grasses, Sagebrush	85%
797-27-13A	Grasses, Sagebrush, Scrub Oak, Serviceberry	75%
Man Camp	Sagebrush, Scrub Oak, Serviceberry	65%
Pond 7	Grasses, Sagebrush, Scrub Oak, Serviceberry	75%
697-16A2	Sagebrush, Scrub Oak, Serviceberry	60%
Pond B (604-44)	Grasses, Sagebrush, Scrub Oak, Serviceberry	65%
697-16-16	Sagebrush, Scrub Oak, Serviceberry	75%
Facility Name	Vegetation Description Upper Cascade Creek Continued...	Percent Ground Cover

797-23-45AX	Grasses, Sagebrush	65%
796-17C	Grasses, Sagebrush	75%
796-17A	Sagebrush, Scrub Oak, Serviceberry	75%
796-16B	Sagebrush, Scrub Oak, Serviceberry	65%

Cascade Creek Approved Seed Mixtures Colorado Land Cover Classification Systems

Table 3

Low-Elevation Salt-Desert Scrub/Basin Big Sagebrush

Common Name	Scientific Name	Form	PLS lbs/acre*
Fourwing Saltbush	<i>Atriplex canescens</i>	Shrub	1.9
Shadscale	<i>Atriplex confertifolia</i>	Shrub	1.5
Galleta	<i>Pleuraphis [Hilaria] jamesii</i>	Bunch	2.5
Alkali Sacaton	<i>Sporobolus airoides</i>	Bunch	0.2
Streambank Wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>psammophilus</i> , <i>Agropyron riparium</i>	Sod-forming	2.5
Slender Wheatgrass	<i>Elymus trachycaulus</i> , <i>Agropyron trachycaulum</i>	Bunch	1.8
Sandberg Bluegrass	<i>Poa sandbergii</i> (<i>Poa secunda</i>)	Bunch	0.3

*Based on 45 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (90 PLS per square foot) if broadcast or hydroseeded.

Pinyon-Juniper Woodland, Mountain/Wyoming Big Sagebrush Shrubland

Common Name	Scientific Name	Form	PLS lbs/acre*
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	Bunch	1.9
Galleta	<i>Pleuraphis [Hilaria] jamesii</i>	Bunch	2.5
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> , <i>Agropyron spicatum</i>	Bunch	2.8
Slender Wheatgrass	<i>Elymus trachycaulus</i> , <i>Agropyron trachycaulum</i>	Bunch	3.3
Muttongrass	<i>Poa fendleriana</i>	Bunch	0.6
Sandberg Bluegrass	<i>Poa sandbergii</i> , <i>Poa secunda</i>	Bunch	0.6

*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded.

Cascade Creek Approved Seed Mixtures
Colorado Land Cover Classification Systems (continued)

Table 3
Mixed Mountain Shrubland, Including Oakbrush

Common Name	Scientific Names	Form	PLS lbs/acre*
Thickspike Wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i> , <i>Agropyron dasystachyum</i>	Sod-forming	3.4
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> , <i>Agropyron spicatum</i>	Bunch	3.7
Bottlebrush Squirreltail	<i>Elymus elymoides</i> , <i>Sitanion hystrix</i>	Bunch	2.7
Slender Wheatgrass	<i>Elymus trachycaulus</i> , <i>Agropyron trachycaulum</i>	Bunch	3.3
Canby Bluegrass	<i>Poa canbyi</i> , <i>P. secunda</i>	Bunch	0.6
Mutton Bluegrass	<i>Poa fendleriana</i>	Bunch	0.6
Letterman Needlegrass	<i>Achnatherum [Stipa] lettermanii</i>	Bunch	1.7
Columbia Needlegrass	<i>Achnatherum [Stipa] nelsonii</i> , <i>Stipa columbiana</i>	Bunch	1.7
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	Bunch	1.9
Junegrass	<i>Koeleria macrantha</i> , <i>K. cristata</i>	Bunch	0.1

*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded.

Spruce-Fir Forest, Including Mountain Meadows

Common Name	Scientific Names	Form	PLS lbs/acre*
Mountain Brome	<i>Bromopsis [Bromus] marginatus</i>	Bunch	5.8
Slender Wheatgrass	<i>Elymus trachycaulus</i> , <i>Agropyron trachycaulum</i>	Bunch	3.3

Letterman Needlegrass	<i>Achnatherum [Stipa] lettermanii</i>	Bunch	3.5
Blue Wildrye	<i>Elymus glaucus</i>	Bunch	4.8
Thickspike Wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i> , <i>Agropyron dasystachyum</i>	Sod-forming	3.4
Idaho Fescue	<i>Festuca idahoensis</i>	Bunch	1.2
Wheeler Bluegrass	<i>Poa nervosa</i>	Sod-forming	0.6

***Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded**

Table 4
Receiving Waters

All drainages listed flow into Conn Creek after the listed waters and then into the Colorado River

Name	Drainage
603-23-32	Unnamed Intermittent Tributary to Cascade Canyon
	Unnamed Intermittent Tributary to Cascade Canyon
604-01	and Unnamed Intermittent Tributary to Conn Creek
604-12-13	Conn Creek
604-44	Unnamed Intermittent Tributary to Cascade Canyon
605-02	Conn Creek
605-1	Unnamed Intermittent Tributary to Spring Creek
	Unnamed Intermittent Tributary to Spring Creek and
605-13-22	Unnamed Intermittent Tributary to Conn Creek
605-23	Spring Creek and Conn Creek
608-41	Unnamed Intermittent Tributary to Conn Creek
608-43-31/Pond 5	Unnamed Intermittent Tributary to Conn Creek
609-01	Unnamed Intermittent Tributary to Conn Creek
609-02/Pond 4	Cascade Canyon
	Unnamed Intermittent Tributary to Conn Creek and
609-14	Unnamed Intermittent Tributary to Cascade Canyon
609-33	Cascade Canyon
610-22-43	Unnamed Intermittent Tributary to Cascade Canyon
610-24-43	Unnamed Intermittent Tributary to Cascade Canyon
616-21-32	Unnamed Intermittent Tributary to Cascade Canyon
617-24	Conn Creek
617-41/Pond 9	Unnamed Intermittent Tributary to Conn Creek
620-1	Cascade Canyon
620-21	Conn Creek
620-24-43	Unnamed Intermittent Tributary to Cascade Canyon
620-33	Conn Creek

620-43-32	Cascade Canyon
629-01	Unnamed Intermittent Tributary to Conn Creek
629-2	Conn Creek
629-31-11	Conn Creek
632-13-22	Conn Creek
632-21-41	Unnamed Intermittent Tributary to Conn Creek
632-23-42	Cascade Canyon
697-08-53/Pond 6	Unnamed Intermittent Tributary to Conn Creek
697-09-61	Unnamed Intermittent Tributary to Cascade Canyon
697-15-01	Unnamed Intermittent Tributary to Cascade Canyon
697-15-23	Unnamed Intermittent Tributary to Corral Gulch
697-15-54/Pond 1	Unnamed Intermittent Tributary to East Fork and Unnamed Intermittent Tributary to McKay Gulch
697-16-16	Cascade Canyon
697-16-28	Unnamed Intermittent Tributary to Cascade Canyon
697-16A	Unnamed Intermittent Tributary to Cascade Canyon
697-16A2	Unnamed Intermittent Tributary to Cascade Canyon
697-16D	Cascade Canyon
697-17	Conn Creek
697-20-28	Conn Creek
705-22-43	Unnamed Intermittent Tributary to Conn Creek
796-16B	Unnamed Intermittent Tributary to Parachute Creek via Mount Callahan Spring
796-17A	Unnamed Intermittent Tributary to Riley Gulch
796-17C	Unnamed Intermittent Tributary to Riley Gulch
796-19C	Unnamed Intermittent Tributary to Riley Gulch
797-03-21B	Baker Gulch and Tourist Run
797-05-36	Unnamed Intermittent Tributary to Gilman Gulch
797-05-52	Unnamed Intermittent Tributary to Gilman Gulch
797-06	Gilman Gulch
797-09C	East Fork
797-14-01	Bowdish Gulch
797-14-36	Unnamed Intermittent Tributary to Bowdish Gulch and Tourist Run
797-23-16	Unnamed Intermittent Tributary to Bowdish Gulch
797-23-45AX	Unnamed Intermittent Tributary to Bowdish Gulch
797-24-47D	Unnamed Intermittent Tributary to Riley Gulch
797-27-13A	Unnamed Intermittent Tributary to Bowdish Gulch
Central Water Facility	Conn Creek
Conn Creek Plant	Conn Creek
FED 23-15	Unnamed Intermittent Tributary to Cascade Canyon
Fed 604-11	Conn Creek
Fed 708-11	Unnamed Intermittent Tributary to Conn Creek
Fed 797-08-19	Conn Creek
Fed 797-08-51D	Unnamed Intermittent Tributary to Conn Creek

Kiewit Crush Area
Oxy Trailers
Pond 10 South

Pond 2/610-21-41
Pond 3/604-41-32
Pond 7
Pond B

Cascade Canyon
Conn Creek
Conn Creek
Unnamed Intermittent Tributary to Cascade Canyon
and Unnamed Intermittent Tributary to House Log
Gulch
Little Creek
Unnamed Intermittent Tributary to Conn Creek
Unnamed Intermittent Tributary to Cascade Canyon

This amendment is for the two New OXY Conn Creek Facilities, the Conn Creek II Compressor Station Facility and the Conn Creek Control Room Facility. The expansion being done for these two facilities will follow the existing Stormwater Management Plan for Cascade Creek Common Plan. All disturbances within the permitted area will be done in accordance with the requirements of the existing permit. With this said, several items will be noted for this amendment.

- 1) Prior to creating any disturbance, perimeter BMPs shall be placed to prevent sediment or other pollution from reaching state waters.
- 2) Use of silt fence or wattles is suggested.
- 3) Standard practices of cut and fill will be used in the same manner as construction of a well pad.
- 4) Slope stabilization will be accomplished as soon as possible.
- 5) Surface roughening techniques are recommended until final stabilization can take place on disturbed areas.
- 6) The use of berms along perimeters is also recommended to control runoff.
- 7) Additional BMP's will be placed strategically to control sediment migration and pollution prevention. These will be site specific for each disturbance. They will be noted on site specific inspection documents. Refer to phased BMP installations for a list of BMPs used at different phases of construction.
- 8) Rock armoring will be placed along the bank of Conn Creek to prevent eroding of the Facility boundary.
- 9) BMPs will be placed above the slope into Conn Creek to prevent erosion into Conn Creek.
- 10) Temporary use areas disturbed during construction will be put into interim reclamation as soon as possible.
- 11) Interim reclamation will include reseeding of the disturbed areas.

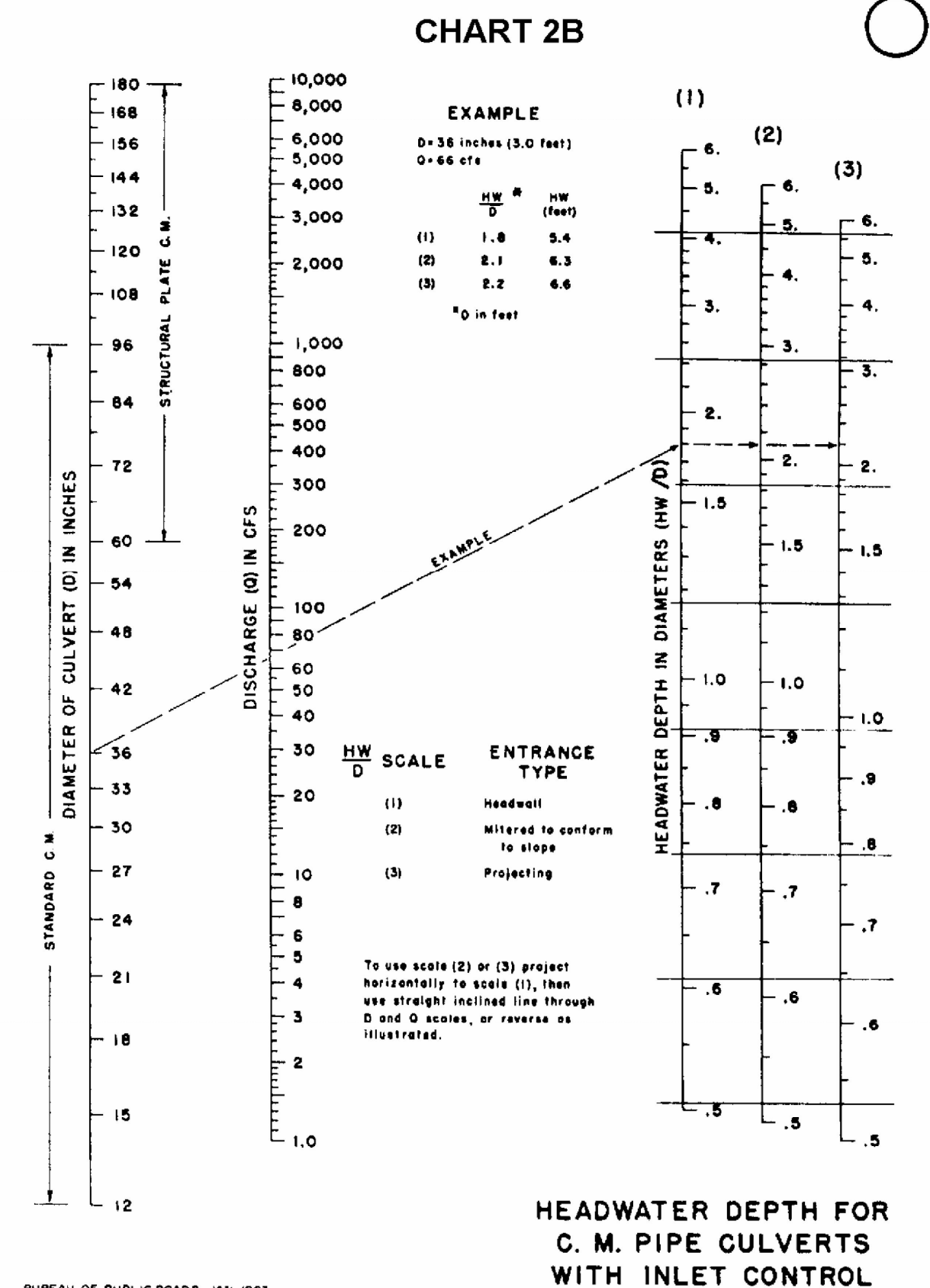
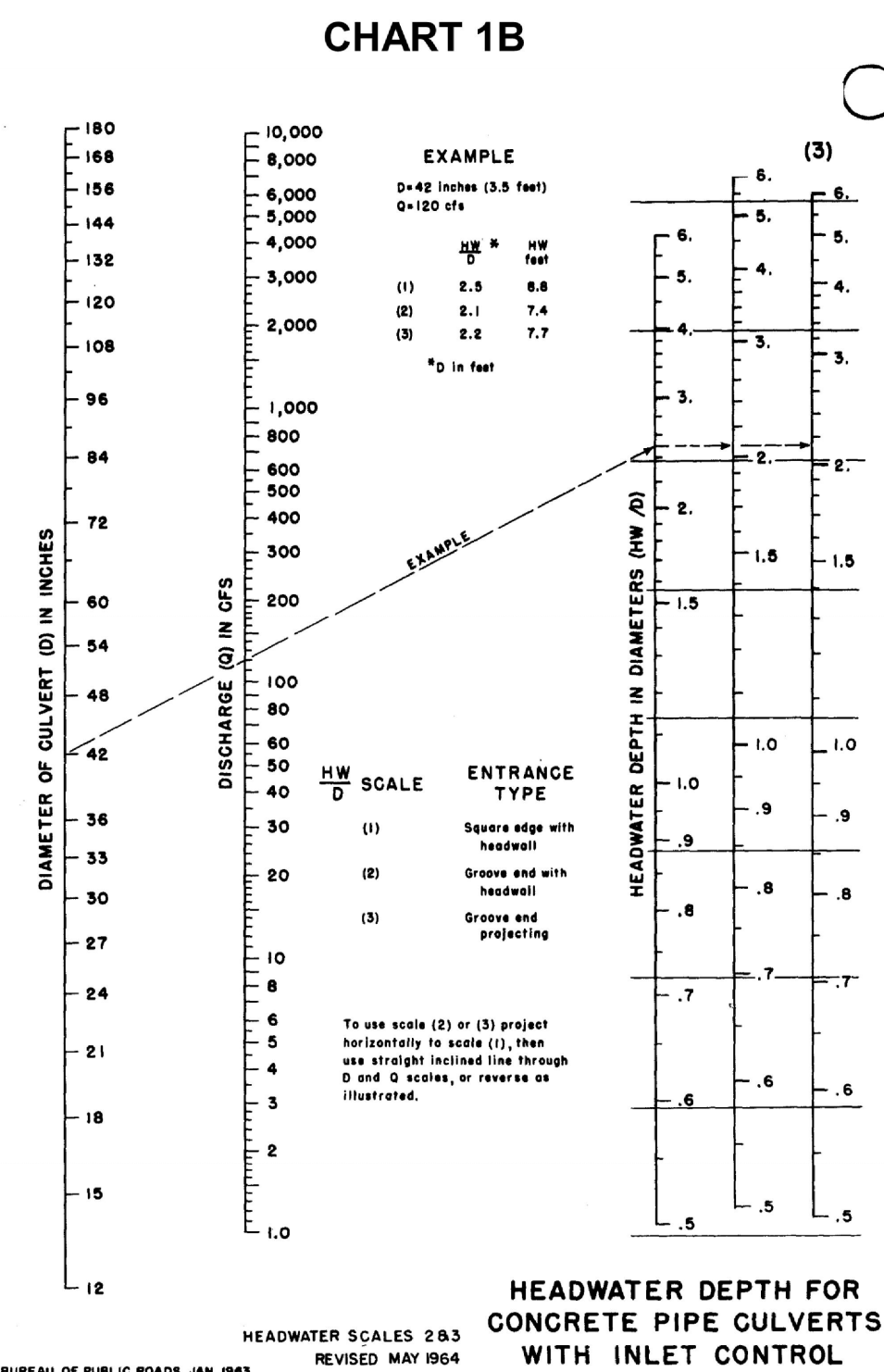
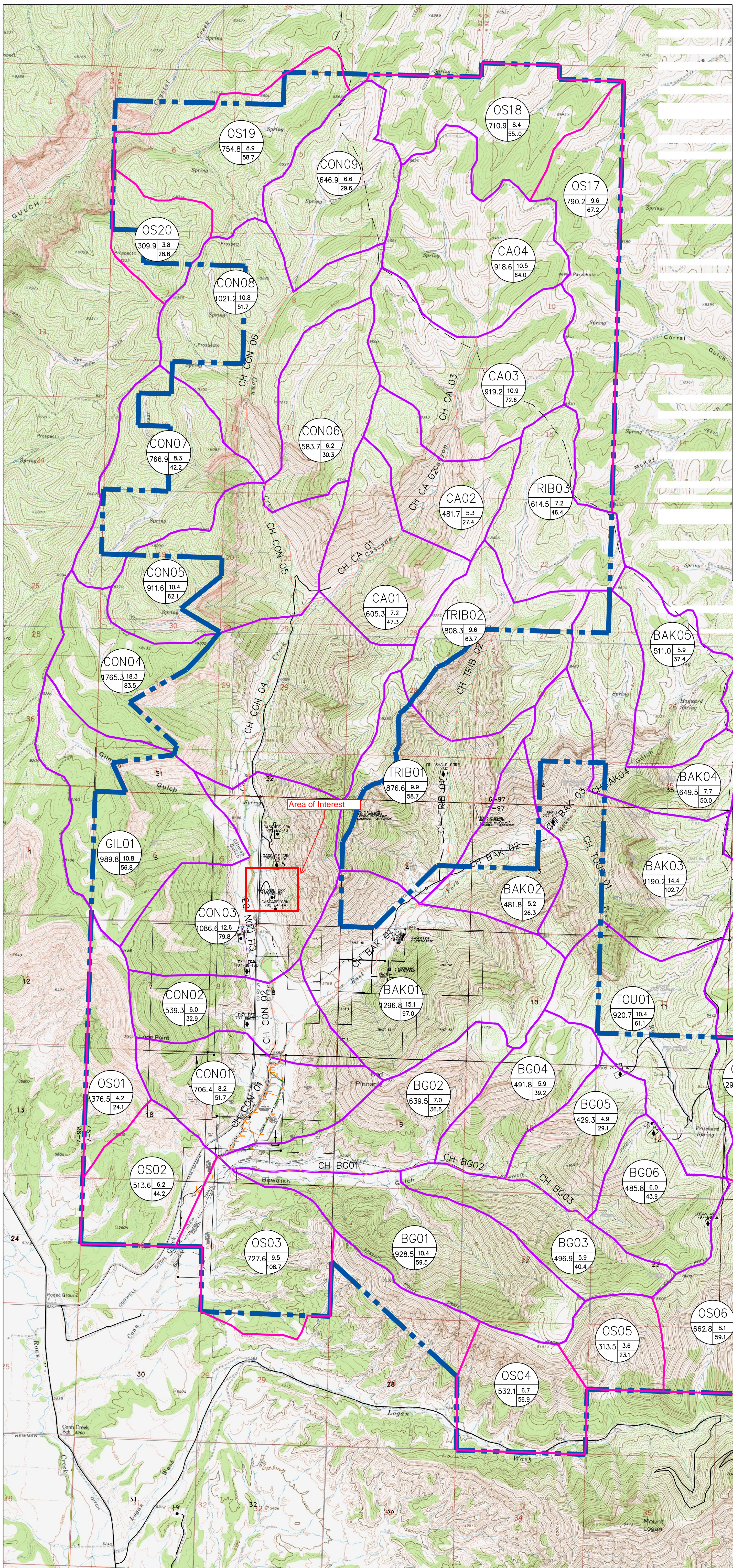
Nolte

Occidental Petroleum
Conn Creek Watershed Hydrology
Garfield County, Colorado

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period			
	2-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	100-Yr (cfs)

SUBAREAS				
Con01	.00	2.23	8.19	51.68
Con02	.00	1.70	5.98	32.92
Con03	.00	3.44	12.62	79.79
Gil01	.00	3.12	10.81	56.82
Con04	.00	5.51	18.25	83.48
Con05	.00	2.88	10.38	62.12
Con06	.00	1.83	6.18	30.03
Con07	.00	2.41	8.28	42.17
Con08	.00	3.20	10.77	51.65
Con09	.00	2.01	6.62	29.64
REACHES				
CH Con 01	.00	25.62	83.55	361.02
Down	.00	25.62	83.51	360.44
CH Con 02	.00	23.99	78.60	342.24
Down	.00	23.99	78.56	341.87
CH Con 03	.00	20.76	68.64	306.97
Down	.00	20.73	68.60	306.29
CH Con 04	.00	12.22	40.60	180.54
Down	.00	12.21	40.50	180.34
CH Con 05	.00	9.42	31.36	142.57
Down	.00	9.42	31.31	142.40
CH Con 06	.00	2.01	6.62	29.64
Down	.00	2.01	6.62	29.54
OUTLET	.00	27.76	89.59	381.32



COMBINED CHANNEL FLOW SUMMARY TABLE

Combined Outfall	247.8	1143.1
Bowditch Gulch		
CH BG 01	39.4	231.7
CH BG 02	22.3	141.7
CH BG 03	6	43.9
Conn Creek		
CH Con 01	208.4*	911.4*
CH Con 02	203.5*	892.6*
CH Con 03	94.8*	456.6*
CH Con 04	66.8*	330.1*
CH Con 05	31.4	142.6
CH Con 06	6.6	29.6
Baker Gulch		
CH BAK 01	98.7	400.8
CH BAK 02	37.3	218.3
CH BAK 03	13.5	85.5
CH BAK 04	5.9	37.4
CH Trib 01	16.6	103.1
CH Trib 02	7.2	46.4
CH Tour 0	10.4	61.1
Cascade Canyon		
CH CA 01	26.2	149.6
CH CA 02	21	123.7
CH CA 03	10.5	64

* FLOW RATES MANUALLY ADDED TO ESTIMATE LOWER REACHES

TRIB03 BASIN DESIGNATION

AREA 614.5 22 46.4

ACRES 25 YEAR BASIN FLOW (CFS)

100 YEAR BASIN FLOW (CFS)

REINFORCED CONCRETE PIPE CULVERT CAPACITY (CFS)

PIPE DIAMETER	HW/D =1.0	HW/D =1.5
18"	6.8	11.0
24"	13.8	21.2
30"	22	39
36"	38	62
42"	54	85
48"	75	125

CORRUGATED METAL PIPE CULVERT CAPACITY (CFS)

PIPE DIAMETER	HW/D =1.0	HW/D =1.5
18"	5.6	9.0
24"	11.8	18.5
30"	20	31
36"	32	50
42"	46	73
48"	66	100

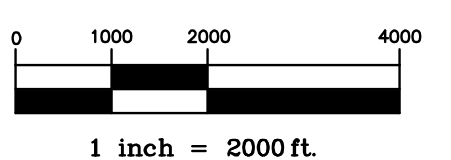
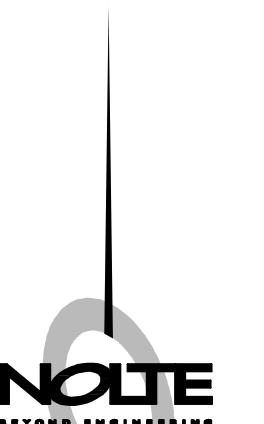
NOTES:

THE ABOVE TABLES ASSUME A HEADWATER DEPTH TO PIPE DIAMETER RATIO OF 1.0 TO 1.5 AND A PROJECTING PIPE END AT THE INLET.

CONSULTATION WITH A CIVIL ENGINEER IS RECOMMENDED FOR LOCATIONS REQUIRING A 36" OR LARGER PIPE CULVERT.

LEGEND

- LIMITS OF DRAINAGE STUDY
- DRAINAGE BASIN BOUNDARY WITHIN CONN CREEK WATERSHED
- DRAINAGE BASIN BOUNDARY OUTSIDE OF CONN CREEK WATERSHED



DATE: 12/19/06 TIME: 11:41:16 AM

SHEET: DVS1 LAYOUT: Layout

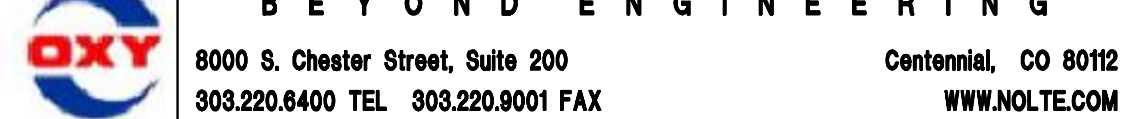
PATH: N:\DVB0235\CADD\CIVIL

DRAWING NAME: ETSO.DWG

PAGE SETUP: ----

DESIGNER: ### PROJ. MGR: ###

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.



OCcidental OIL AND GAS CORPORATION

REGIONAL DRAINAGE ANALYSIS

WATERSHED EXHIBIT

PREPARED FOR: FORERUNNER CORPORATION

DATE SUBMITTED: 12/19/06

SHEET NUMBER 1 OF SHEETS

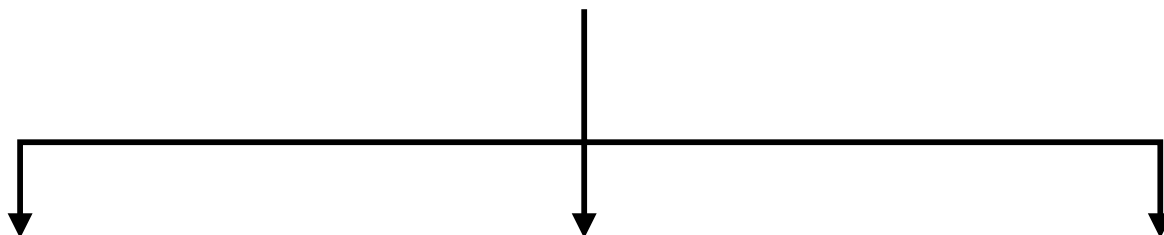
SCALE: VERTICAL: 1"= 200' HORIZONTAL: 1"= 2000'

JOB NUMBER DVB0235

Total Feed Water (Influent)			
Type	Percent	BBD	MGD
Water	95	2850	0.1197
Condensate	5	150	0.0063
Total	100	3000	0.126



Onsite			
Type	Percent	BBD	MGD
Water	95	2850	0.1197
Condensate	5	150	0.0063
Total	100	3000	0.126



Injection Well 629-1			
Type	Percent	BBD	MGD
Water	100	750	0.0315
Condensate	0	0	0
Total	100	750	0.0315

Injection Well 28-10			
Type	Percent	BBD	MGD
Water	100	1750	0.0735
Condensate	0	0	0
Total	100	1750	0.0735

Disposal and/or Reuse			
Type	Percent	BBD	MGD
Water	70	350	0.0147
Condensate	30	150	0.0063
Total	100	500	0.021

Explanation

BBD Barrels Per Day
MGD Million Gallons Per Day

PROJECT NO:	009-0420
DRAWN BY:	CWW
DATE:	01/27/2010

Representative Mass Flow Balance

OXY USA WTP LP
Central Water Handling Facility
Conn Creek, Garfield County, Colorado



826 21½ Road
Grand Junction, CO 81505
TEL 970.263.7800
FAX 970.263.7456

FIGURE

1

Chemical Analysis of Inflow Water to the Oxy Central Water Handling Facility

Multi-Chem Group, LLC

Multi-Chem Analytical Laboratory

1553 East Highway 40

Vernal, UT 84078



Water Analysis Report

Production Company: **OXY USA WTP LP (152)**

Sample ID: **WA-34884**

Well Name: **Hells Gulch**

Sample Point: **alkali prod tanks**

Sample Date: **12/14/2009**

Sales Rep: **Bert Wollerman**

Lab Tech: **Peter Poulsen**

Sample Specifics	
Test Date:	12/18/2009
Temperature (°F):	58
Sample Pressure (psig):	0
Specific Gravity (g/cm³):	1.0132
pH:	6.5
Turbidity (NTU):	-
Calculated T.D.S. (mg/L)	16682
Molar Conductivity (µS/cm):	25276
Resitivity (Mohm):	0.3956

Analysis @ Properties in Sample Specifics			
Cations	mg/L	Anions	mg/L
Calcium (Ca):	280.00	Chloride (Cl):	9500.00
Magnesium (Mg):	-	Sulfate (SO ₄):	22.00
Barium (Ba):	36.00	Dissolved CO ₂ :	119.00
Strontium (Sr):	-	Bicarbonate (HCO ₃):	702.00
Sodium (Na):	6020.00	Carbonate (CO ₃):	-
Potassium (K):	-	H ₂ S:	0.50
Iron (Fe):	1.92	Phosphate (PO ₄):	-
Manganese (Mn):	0.89	Silica (SiO ₂):	-
Lithium (Li):	-	Fluoride (F):	-
Aluminum (Al):	-	Nitrate (NO ₃):	-
Ammonia NH ₃ :	-	Lead (Pb):	-
		Zinc (Zn):	-
		Bromine (Br):	-
		Boron (B):	-

Test Conditions		Scale Values @ Test Conditions - Potential Amount of Scale in lb/1000bbl										
		Calcium Carbonate CaCO ₃		Gypsum CaSO ₄ · 2H ₂ O		Calcium Sulfate CaSO ₄		Strontium Sulfate SrSO ₄		Barium Sulfate BaSO ₄		Calculated CO ₂
		Sat Index	Scale	Sat Index	Scale	Sat Index	Scale	Sat Index	Scale	Sat Index	Scale	psi
Temp °F	Gauge Press. psi											
58	0	0.21	-0.71	0.00	-2332.00	0.00	-2851.50	-	-	30.75	40.32	4.45
80	0	0.35	-0.49	0.00	-26.59	0.00	-2806.60	-	-	18.64	37.70	1.80
100	0	0.50	-0.33	0.00	-22.54	0.00	-2631.90	-	-	12.15	34.93	2.28
120	0	0.66	-0.20	0.00	-19.39	0.00	-2369.20	-	-	8.10	31.73	2.60
140	0	0.85	-0.08	0.00	-16.89	0.00	-2057.90	-	-	5.51	28.06	2.97
160	0	1.05	0.02	0.00	-14.89	0.00	-1731.30	-	-	3.82	23.86	3.40
180	0	1.26	0.13	0.01	-13.28	0.01	-1414.80	-	-	2.69	19.06	3.78
200	0	1.47	0.22	0.01	-11.96	0.01	-1125.10	-	-	1.92	13.59	3.88
220	2.51	1.66	0.31	0.01	-11.00	0.01	-884.85	-	-	1.36	6.93	3.98
240	10.3	1.84	0.39	0.01	-10.12	0.02	-668.60	-	-	0.99	-0.34	4.09
260	20.76	2.01	0.47	0.01	-9.38	0.03	-490.86	-	-	0.72	-8.62	4.20
280	34.54	2.14	0.55	0.01	-8.77	0.04	-348.94	-	-	0.54	-18.07	4.32
300	52.34	2.25	0.61	0.01	-8.27	0.07	-238.80	-	-	0.40	-28.88	4.45

Conclusions:

Calcium Carbonate scale is indicated. See graph for appropriate temperature ranges.

Gypsum Scaling Index is negative from 80°F to 300°F

Calcium Sulfate Scaling Index is negative from 80°F to 300°F

Strontium Sulfate scaling was not evaluated

Barium Sulfate NO CONCLUSION

Notes:

Multi-Chem Group, LLC

Multi-Chem Analytical Laboratory

1553 East Highway 40

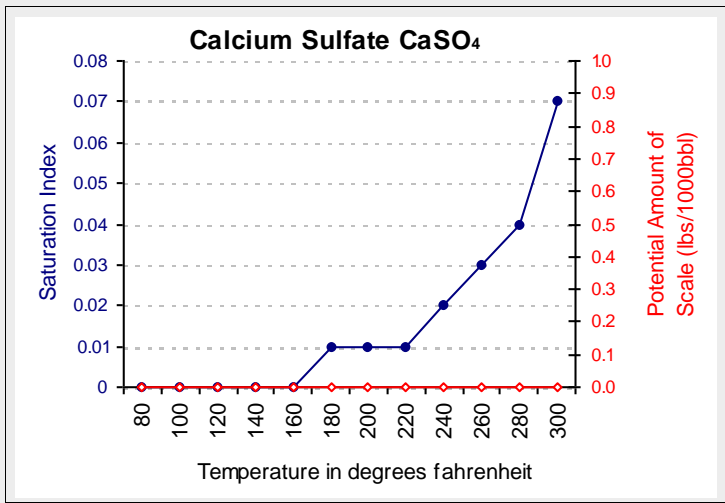
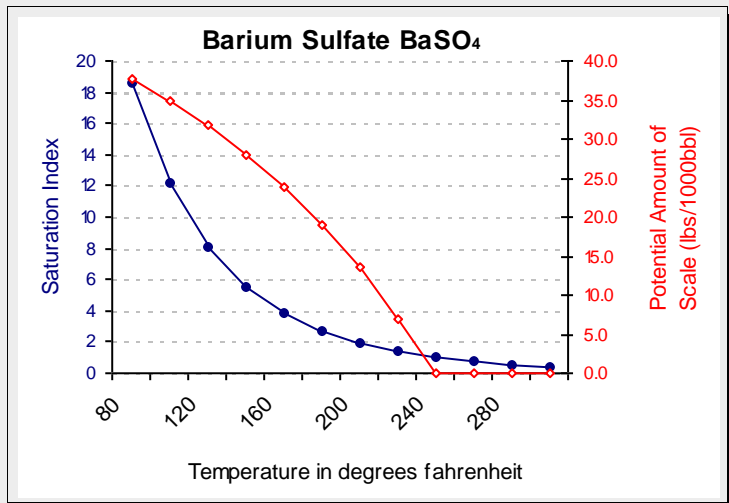
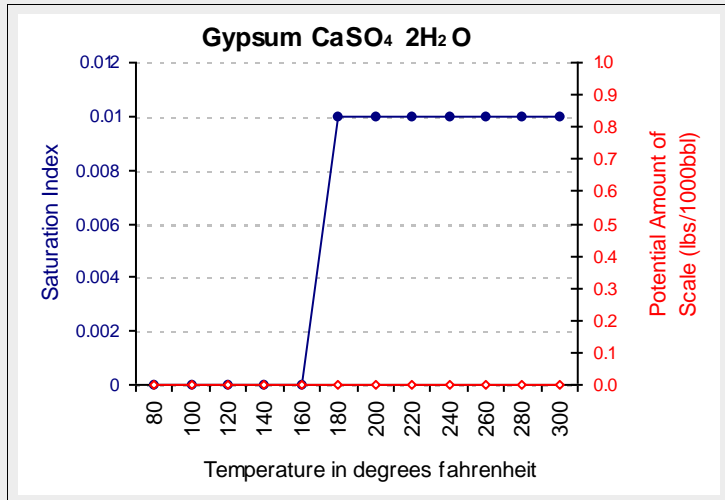
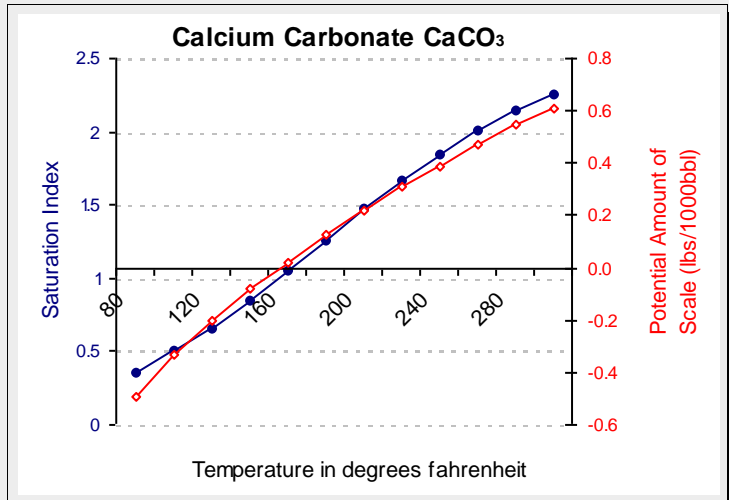
Vernal, UT 84078



Scale Prediction Graphs

Well Name: **Hells Gulch**

Sample ID: **WA-34884**



Multi-Chem Group, LLC

Multi-Chem Analytical Laboratory

1553 East Highway 40

Vernal, UT 84078



Water Analysis Report

Production Company: **OXY USA WTP LP (152)**

Sample ID: **WA-34885**

Well Name: **Cascade Creek 629-1 SWD**

Sample Point: **at inj pumps**

Sample Date: **12/14/2009**

Sales Rep: **Bert Wollerman**

Lab Tech: **Peter Poulsen**

Sample Specifics	
Test Date:	12/18/2009
Temperature (°F):	55
Sample Pressure (psig):	0
Specific Gravity (g/cm³):	1.0132
pH:	6.5
Turbidity (NTU):	-
Calculated T.D.S. (mg/L)	16509
Molar Conductivity (µS/cm):	25014
Resitivity (Mohm):	0.3998

Analysis @ Properties in Sample Specifics			
Cations	mg/L	Anions	mg/L
Calcium (Ca):	480.00	Chloride (Cl):	9000.00
Magnesium (Mg):	-	Sulfate (SO ₄):	31.00
Barium (Ba):	111.00	Dissolved CO ₂ :	143.00
Strontium (Sr):	-	Bicarbonate (HCO ₃):	1128.00
Sodium (Na):	5607.00	Carbonate (CO ₃):	-
Potassium (K):	-	H ₂ S:	2.00
Iron (Fe):	6.12	Phosphate (PO ₄):	-
Manganese (Mn):	0.87	Silica (SiO ₂):	-
Lithium (Li):	-	Fluoride (F):	-
Aluminum (Al):	-	Nitrate (NO ₃):	-
Ammonia NH ₃ :	-	Lead (Pb):	-
		Zinc (Zn):	-
		Bromine (Br):	-
		Boron (B):	-

Test Conditions		Scale Values @ Test Conditions - Potential Amount of Scale in lb/1000bbl										
		Calcium Carbonate CaCO ₃		Gypsum CaSO ₄ · 2H ₂ O		Calcium Sulfate CaSO ₄		Strontium Sulfate SrSO ₄		Barium Sulfate BaSO ₄		Calculated CO ₂
		Sat Index	Scale	Sat Index	Scale	Sat Index	Scale	Sat Index	Scale	Sat Index	Scale	psi
Temp °F	Gauge Press. psi											
55	0	0.53	-0.26	0.01	-2022.70	0.01	-2563.80	-	-	137.43	59.19	7.14
80	0	0.93	-0.03	0.01	-26.44	0.01	-2535.20	-	-	77.58	57.54	2.88
100	0	1.31	0.12	0.01	-22.39	0.01	-2371.20	-	-	50.62	56.20	3.66
120	0	1.70	0.25	0.01	-19.22	0.01	-2122.40	-	-	33.82	54.79	4.18
140	0	2.12	0.37	0.01	-16.72	0.01	-1827.60	-	-	23.08	53.24	4.77
160	0	2.57	0.49	0.01	-14.71	0.01	-1519.50	-	-	16.05	51.46	5.45
180	0	3.02	0.60	0.01	-13.08	0.01	-1223.00	-	-	11.35	49.34	6.07
200	0	3.45	0.72	0.01	-11.76	0.02	-953.97	-	-	8.14	46.75	6.23
220	2.51	3.81	0.83	0.01	-10.79	0.03	-733.24	-	-	5.79	43.49	6.38
240	10.3	4.16	0.93	0.01	-9.89	0.04	-537.56	-	-	4.24	39.39	6.56
260	20.76	4.45	1.03	0.01	-9.15	0.06	-379.84	-	-	3.13	34.27	6.74
280	34.54	4.67	1.12	0.01	-8.53	0.09	-256.99	-	-	2.32	27.94	6.93
300	52.34	4.84	1.21	0.01	-8.02	0.14	-164.65	-	-	1.74	20.16	7.14

Conclusions:

Calcium Carbonate scale is indicated. See graph for appropriate temperature ranges.

Gypsum Scaling Index is negative from 80°F to 300°F

Calcium Sulfate Scaling Index is negative from 80°F to 300°F

Strontium Sulfate scaling was not evaluated

Barium Sulfate scale is indicated at all temperatures from 80°F to 300°F

Notes:

Multi-Chem Group, LLC

Multi-Chem Analytical Laboratory

1553 East Highway 40

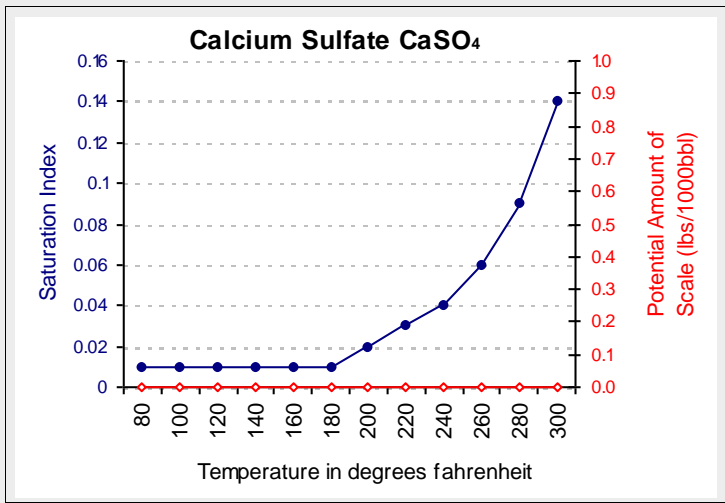
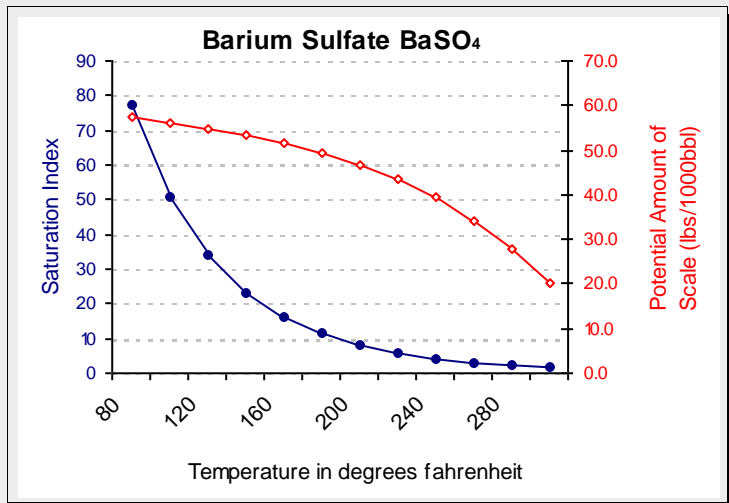
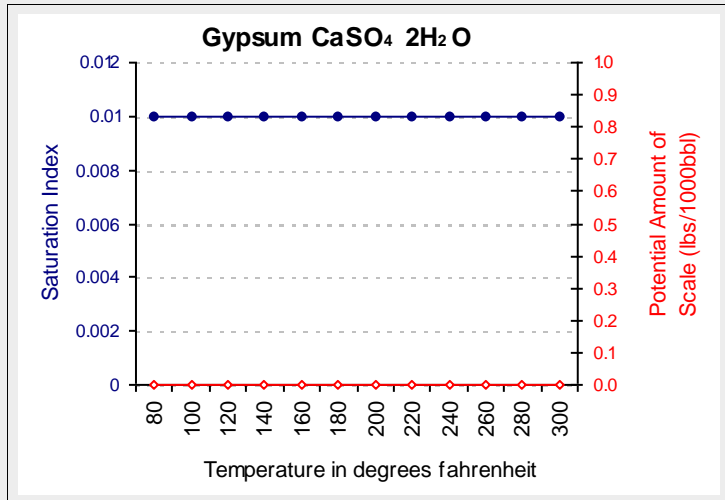
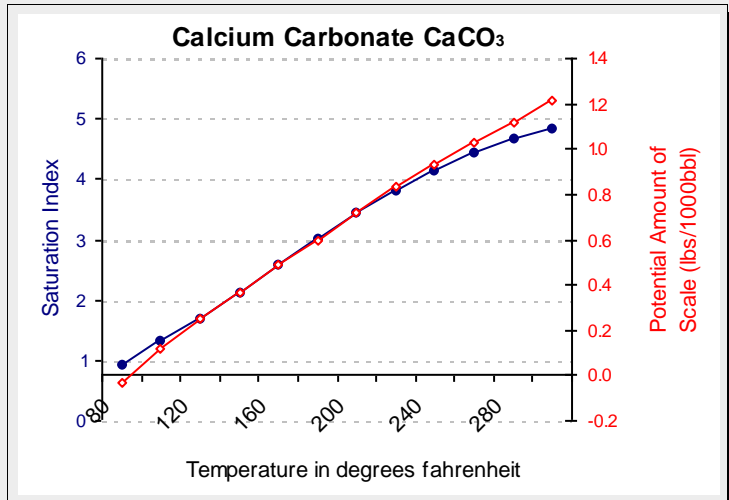
Vernal, UT 84078



Scale Prediction Graphs

Well Name: **Cascade Creek 629-1 SWD**

Sample ID: **WA-34885**



Chemical Analysis of Outflow Water from the Oxy Central Water Handling Facility

Company Name/Address:

Walsh Env.- Grand Junction535 Grand Avenue
Grand Junction.CO 81501

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody
Page ___ of ___

Prepared by:

 **ENVIRONMENTAL
SCIENCE CORP.**12065 Lebanon Road
Mt. Juliet, TN 37122

Phone (615) 758-5858

Phone (800) 767-5859

FAX (615) 758-5859

Report to:

Blair Rollins

Email to:

brollins@walshenv.com

Project

Description: Central Water Facility

City/State
Collected

Grand Junction, CO

Phone: (970) 241-4636

Client Project #:

ESC Key:

FAX:

7830-140

Collected by:

Blair Rollins

Site/Facility ID#:

P.O.#:

Collected by (signature):

**Rush?** (Lab MUST Be Notified)

___ Same Day.....200%

___ Next Day.....100%

___ Two Day.....50%

___ Three Day.....25%

Date Results Needed:

Email? ___No___Yes

FAX? ☒No___YesNo.
of
CntrsPacked on Ice N ___ Y ☒

CoCode: WALSHGJC (lab use only)

Template/Prelogin

Shipped Via:

Sample ID

Comp/Grab

Matrix*

Depth

Date

Time

W-1

Grab

WW

NA

5/2/08

0930

5

Remarks/Contaminant

Sample # (lab only)

L343654

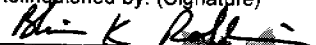
*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

Remarks: Will call on Monday, May 5, 2008 with more analytes

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature)



Date:

5/2/08

Time:

1700

Received by: (Signature)

FED EX

Samples returned via: ☐ UPS☒ FedEx ☐ Courier ☐

Condition: (lab use only)

DRO pH adjusted @ lab.

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp:

3.4°C

Bottles Received:

5

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date:

5/3/08

Time:

09:00

pH Checked:

NCF:

Mark

ENVIRONMENTAL SCIENCE CORP.

SAMPLE NON-CONFORMANCE FORM

Sample No. : L343654-JE

Date: 5-3-08

Evaluated by: Jasen

Client: WALSHGECO

Non-Conformance (check applicable items)

- | | |
|---|--|
| <input type="checkbox"/> Chain of Custody is missing | <input checked="" type="checkbox"/> Login Clarification Needed |
| <input type="checkbox"/> Improper container type | <input type="checkbox"/> Improper preservation |
| <input type="checkbox"/> Chain of custody is incomplete | <input type="checkbox"/> Container lid not in tact |
| <input type="checkbox"/> Parameter(s) past holding time | <input type="checkbox"/> Improper temperature |
| <input type="checkbox"/> Broken container(s) see below | <input type="checkbox"/> Broken container: sufficient sample volume remains for analysis requested |
| <input type="checkbox"/> Insufficient packing material around container | |
| <input type="checkbox"/> Insufficient packing material inside cooler | |
| <input type="checkbox"/> Improper handling by carrier (FedEx / UPS / Courier) | |
| <input type="checkbox"/> Sample was frozen | |

Comments: What Metals?

Login Instructions:

TSR Initials: MB

Client informed by call email / fax / voice mail date: 5/6/08 time: 0930

Client contact: Blair Rollins

- MRCRA + Sb, Be, Co, Cu, Mo, Ni, + Zn



ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Blair Rollins
Walsh Env.- Grand Junction
535 Grand Avenue

Grand Junction, CO 81501

Report Summary

Tuesday May 13, 2008

Report Number: L343654

Samples Received: 05/03/08

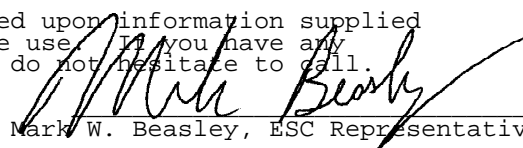
Client Project: 7830-140

Description: Central Water Facility

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Laboratory Certification Numbers


Mark W. Beasley, ESC Representative

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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1 Samples Reported: 05/13/08 08:31 Printed: 05/13/08 08:31

Page 1 of 4



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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blair Rollins
Walsh Env.- Grand Junction
535 Grand Avenue
Grand Junction, CO 81501

May 13, 2008

Date Received : May 03, 2008
Description : Central Water Facility

Sample ID : W-1

Collected By : Blair Rollins
Collection Date : 05/02/08 09:30

ESC Sample # : L343654-01

Site ID :

Project # : 7830-140

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	11000	100	mg/l	300.0	05/03/08	100
Sulfate	200	25.	mg/l	300.0	05/06/08	5
pH	6.8		su	4500H-B	05/07/08	1
Specific Conductance	32000		umhos/cm	120.1	05/09/08	1
Dissolved Solids	20000	10.	mg/l	2540C	05/08/08	1
Mercury	BDL	0.00020	mg/l	245.1	05/09/08	1
Antimony	BDL	0.020	mg/l	200.7	05/09/08	1
Arsenic	BDL	0.020	mg/l	200.7	05/09/08	1
Barium	33.	0.0050	mg/l	200.7	05/09/08	1
Beryllium	BDL	0.0020	mg/l	200.7	05/09/08	1
Cadmium	BDL	0.0050	mg/l	200.7	05/09/08	1
Chromium	0.028	0.010	mg/l	200.7	05/09/08	1
Cobalt	BDL	0.010	mg/l	200.7	05/09/08	1
Copper	0.66	0.020	mg/l	200.7	05/09/08	1
Lead	0.027	0.025	mg/l	200.7	05/13/08	5
Molybdenum	0.045	0.0050	mg/l	200.7	05/09/08	1
Nickel	BDL	0.020	mg/l	200.7	05/09/08	1
Selenium	BDL	0.020	mg/l	200.7	05/09/08	1
Silver	0.011	0.010	mg/l	200.7	05/09/08	1
Zinc	BDL	0.030	mg/l	200.7	05/09/08	1
Benzene	3.7	0.050	mg/l	8021/8015	05/07/08	100
Toluene	9.5	0.50	mg/l	8021/8015	05/07/08	100
Ethylbenzene	0.50	0.050	mg/l	8021/8015	05/07/08	100
Total Xylene	10.	0.15	mg/l	8021/8015	05/07/08	100
TPH (GC/FID) Low Fraction	74.	10.	mg/l	GRO	05/07/08	100
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	90.5		% Rec.	8021/8015	05/07/08	100
a,a,a-Trifluorotoluene(PID)	99.1		% Rec.	8021/8015	05/07/08	100
TPH (GC/FID) High Fraction	74.	2.1	mg/l	3510/DRO	05/07/08	21
Surrogate Recovery (50-150)						
o-Terphenyl	0.00		% Rec.	3510/DRO	05/07/08	21

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/08 08:31 Printed: 05/13/08 08:31

Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L343654-01	pH o-Terphenyl	T8 J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
05/13/08 at 08:31:49

TSR Signing Reports: 134
R5 - Desired TAT

Sample: L343654-01 Account: WALSHGJCO Received: 05/03/08 09:00 Due Date: 05/09/08 00:00 RPT Date: 05/13/08 08:31

**OXY CENTRALIZED E&P WATER MANAGEMENT
FACILITY
GARFIELD COUNTY, COLORADO**

**GROUNDWATER AND SURFACE WATER
SAMPLING AND ANALYSIS PLAN**

**OXY USA WTP LP
760 Horizon Drive, Suite
Grand Junction, CO 81506**

REVISION DATE:

March 2010

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ATTACHMENTS

Attachment A **Proposed Sampling Location Diagram**

Attachment B **Analyte and Sample Container List**

1.0 INTRODUCTION

This groundwater and surface water sampling and analysis plan (SAP) is intended for use at OXY USA WTP LP's (Oxy) Centralized E&P Waste Management Facility (CWMF) to monitor the quality of ground water and surface water, and to assure quality and consistency in data collection. The SAP will be used to accomplish the following:

- Collection of groundwater samples from wells and surface water from streams;
- Collection of groundwater and surface water field data;
- Documentation of data collection activities;
- Decontamination procedures; and
- Analytical Program and Quality Assurance.

The primary objectives of this SAP are to:

- To provide consistency in data collection;
- To guarantee consistency with regulatory requirements;
- To sufficiently document all field activities;
- Monitor groundwater and surface water quality; and
- Determine compliance with applicable standards.

2.0 FIELD DATA COLLECTION ACTIVITIES

The field data collection methods and procedures that will be used to assess potential impacts from the operation of the CWMF are described in this section. The locations where samples will be collected are shown on Figure A-1. Recommendations and requirements of the Colorado Oil and Gas Conservation Commission (COGCC) Rules and Regulations, Rules of Practice and Procedure, and Oil and Gas Conservation Act (as Amended), USEPA protocol and practical experience have been incorporated into this sampling and analysis plan.

2.1 Documentation

One of the most important data collection tasks is the recording of information that can be easily transferred and interpreted by those not familiar with the field activities that are being recorded. Each page should be legible when copied and an indelible-ink pen should be used for all recordings. Sampling personnel will maintain bound field logbooks that have numbered or dated pages or field data sheets to record all data collection activities. Notes

should be taken in a manner such that the information can readily be transferred to a database or similar data tabulation and storage system. If field data sheets are used, a logbook should also be maintained that identifies the individuals present during sampling and describes the task or tasks accomplished and any other pertinent information that is not addressed on the data sheet. All entries into the logbook will include the date and initials of the person making the entry and/or page numbers on the top of the page. In addition to the specific information identified for each of the field activities described above, other general information should be recorded in the log book, such as, equipment used for the activity; daily weather conditions (~temperature, ~wind direction, absence or presence of precipitation); locations and times of sampling; any extra level of effort that was extended to perform the duties; and any individuals present during the sampling activities, including any visitors or members of the general public. Field equipment calibration records will be kept in the Oxy field office or other centralized location.

2.2 Groundwater Sampling

The following procedures apply to the collection of groundwater samples from domestic water supply wells. Prior to collecting a groundwater sample, a minimum of three well volumes of water should be removed from the well or by dewatering the well at least once using dedicated or disposable bailers with bottom loading valve assemblies, clean stainless bailers or a clean pump and tubing. If the well is dewatered, the water level in the monitoring wells should be allowed to recover to a minimum of 90 percent of the original water level, if possible. The groundwater samples collected from domestic wells should be collected from the wellhead tap or other sampling port located upstream of any water treatment system or holding tank used for the water supply system. Samples collected from domestic wells will follow the protocols established by the Colorado Department of Public Health and Environment (CDPHE). The individual collecting the samples should wear disposable "exam-type" gloves to prevent cross contamination of the samples and/or the domestic water supply. The gloves should be changed following the collection of each sample from each sample location.

At a minimum, field parameters including pH, temperature, and conductivity, when possible, should be measured and recorded prior to the collection of the sample. It is imperative that all instruments be calibrated according to respective manufacturer specifications and that the calibration and response of all instruments be checked daily before sampling activities begin. Each sample will be given a distinct ID (i.e. sample location or well number) and labeled with the requested analyses, date, time and initials of the sampler.

2.3 Surface Water Sample Collection

The following procedures apply to the collection of samples from flowing creeks or streams. Prior to collecting the samples, care should be taken to not disturb the surface water upstream of the sampling location.

The sample team leader will estimate the depth and width of the channel. If possible, the flow velocity will then be estimated by measuring the time required for a floatable object to travel a given reach of stream. A discharge estimate can be determined by multiplying the width (ft) X depth (ft) X velocity (ft/second). When quantitative measurements are not possible, make a qualitative description of flow including an estimate of discharge. Take photographs to aid in documenting the qualitative description.

For surface water samples collected from the bank of a stream, collect the water sample either by using a peristaltic pump with new tubing, or by dipping the collection bottle into the water. Obtain the field parameters outlined below for the surface water samples and record on the field data sheet.

At a minimum, field parameters including pH, temperature, and conductivity, when possible, should be measured and recorded prior to the collection of the sample. Initial field parameters also should be measured and recorded so that well development and collection of formation water can be proven. It is imperative that all instruments be calibrated according to respective manufacturer specifications and that the calibration and response of all instruments be checked daily before sampling activities begin. Each sample will be given a distinct ID (i.e. sample location or well number) and labeled with the requested analyses, date, time and initials of the sampler.

2.4 Analytical Program and Quality Assurance

All sampling activities will adhere to strict chain-of-custody protocols. Each sample container will be sealed and the individual(s) performing the sampling will complete and sign the applicable chain-of-custody forms.

Water samples collected for volatile analyses, such as benzene, toluene, ethylbenzene, & xylene (BTEX), should be placed in clean preserved or non-preserved sample containers with zero headspace, labeled, and placed into an iced cooler immediately. Samples collected for dissolved metal analyses should be field filtered using a portable peristaltic sampling pump and a 0.45 micron in-line filter prior to collection in a clean non-preserved sampling container. Samples collected for other analyses should be placed into the appropriate sample containers that contain the appropriate sample preservative as designated by the laboratory. All samples should be shipped in iced coolers and delivered to the laboratory under chain-of-custody procedures.

Generally if sample collection involves the collection of 10 or more samples then the need for high-quality data for the samples collected should be attempted. These laboratory quality assurance/quality control (QA/QC) measures are based on guidance published in the most current edition of the EPA Test Methods for Evaluating Solid Waste SW-846. Laboratory quality assurance samples will include one duplicate sample per 20 samples collected plus matrix spike/matrix spike duplicates as specified by the EPA laboratory methods. Equipment blank samples should be collected if using an external pump and associated tubing is used after the collection of five samples using distilled water. Trip blanks may be submitted along

with other environmental samples if high volatiles are expected. If there is a potential for cross-contamination of the samples from hydrocarbon emission sources in the vicinity of the sample collection activities such as a well head, compressors or generators, then a field blank containing distilled water should be collected by removing the cap on the sample container during the entire time of volatile sampling.

Surface and groundwater samples will be analyzed as listed in Attachment B. Associated holding times for each analyses are also listed. All samples should be shipped to the laboratory in iced coolers under chain-of-custody procedures by overnight courier.

Baseline samples will be collected from all sampling locations as part of the process for permitting the facility by the COGCC, and these baseline samples will be analyzed for the entire suite of analytes shown in Attachment C. Routine samples collected from wells and surface water sampling locations will be collected semi-annually and analyzed for BTEX, TDS, Chlorides, and Sulfates. As outlined in Section 3.0 below, these results will be compared to the baseline results to determine if there is any indication of impact. In the event that there is such an indication, samples will be collected for the full suite of analyses to further characterize the impact.

2.5 Decontamination

This procedure applies to all down-hole equipment placed in wells for groundwater level measurements, and to all sample collection equipment. The sampling equipment used will be thoroughly cleaned prior to initiation of sampling activities and between each use at the site. Decontamination of field instruments, small items (slip caps) or delicate materials (i.e. soft plastics) will include an alconox wash and scrubbing with bristle brush or paper towel as appropriate to remove potential contaminants, followed by a methanol rinse, and then a deionized water rinse. Prior to placing anything into a domestic well, the items must be washed by a Clorox bleach solution.

2.6 Personal Protective Equipment

Reasonable caution, including use of proper handling techniques and use of personal protective equipment (PPE), should be practiced whenever hazardous or unknown substances are encountered during sampling activities. PPE to be used includes, but may not be limited to, safety glasses, hard hat, and rubber gloves and steel-toed boots. The Oxy Health, Environmental, and Safety Specialist, the Oxy Employee Safety Manual, and appropriate Material Safety Data Sheets should be consulted for further guidance.

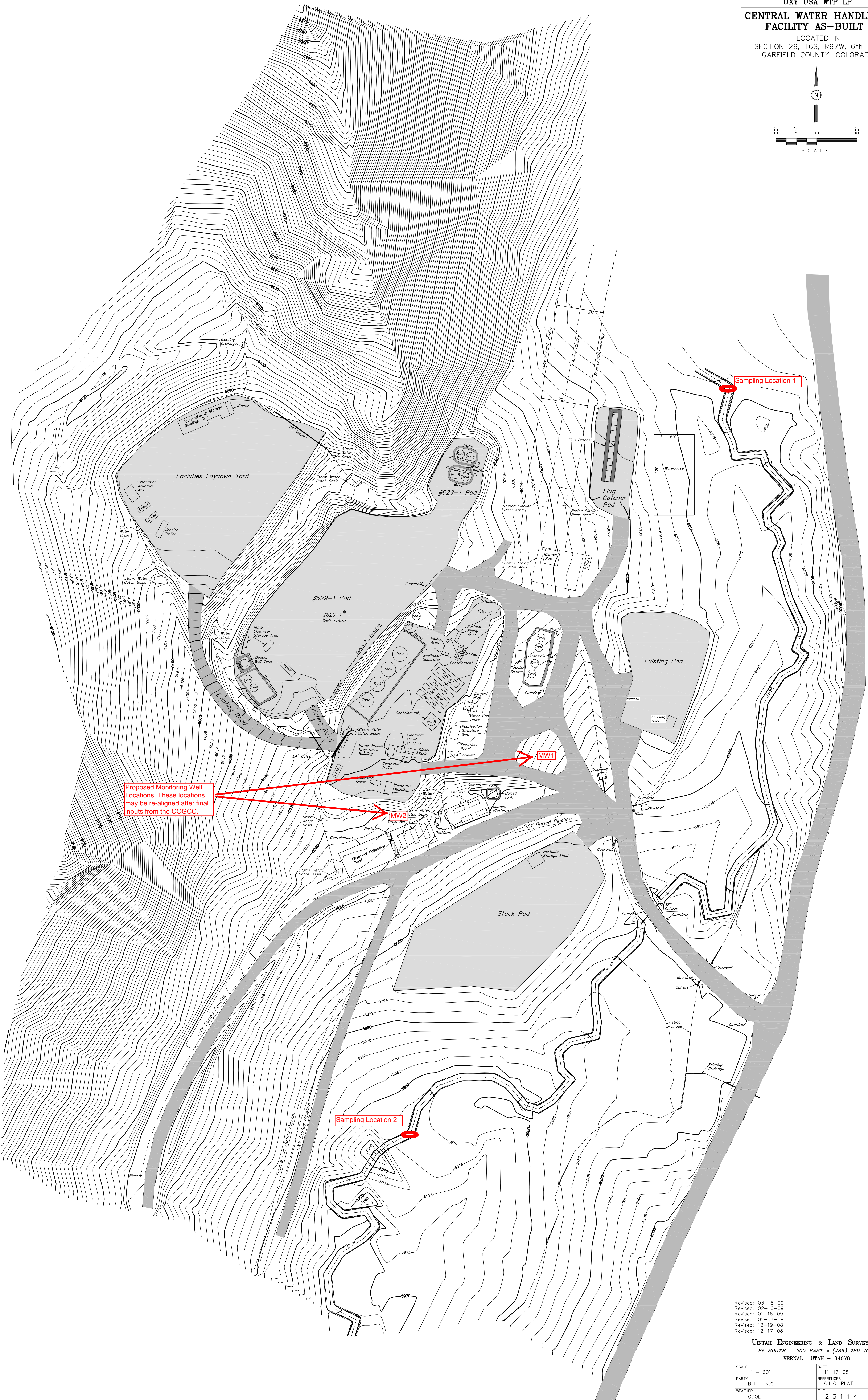
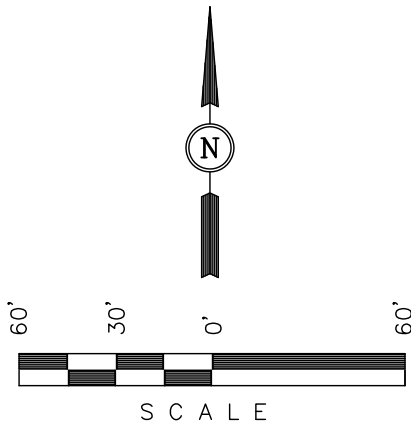
3.0 DATA MANAGEMENT

All analytical data received from the laboratories will be compiled in a spreadsheet detailing location information, site identification, sample collection date, sample source, and field parameters. The results of the routine semi-annual sampling at each location will be compared with the baseline results from that location to determine if there is any indication

that the operation of the facility may have impacted groundwater or surface water. In addition, water quality standards from various entities including the Environmental Protection Agency, and the CDPHE, Water Quality Control Commission (CDPHE-WQCC) will be compared with all incoming analytical data to verify that certain analytes are within appropriate levels for human consumption.

All analytical results will be provided annually to the COGCC in either a hard copy or electronic data deliverable format, depending upon the preference of COGCC staff. All submittals to the COGCC will be labeled with Facility ID Number as assigned by the COGCC. Any results that indicate potential impact from the facilities operation will be promptly reported to the COGCC.

ATTACHMENT A
PROPOSED SAMPLING LOCATION DIAGRAM



Proposed Monitoring Well
Locations. These locations
may be re-aligned after final
inputs from the COGCC.

Revised: 03-18-09
Revised: 02-16-09
Revised: 01-16-09
Revised: 01-07-09
Revised: 12-19-08
Revised: 12-17-08

UNTAEH ENGINEERING & LAND SURVEYING 85 SOUTH - 200 EAST • (435) 789-1017 VERNAL, UTAH - 84078	
SCALE 1" = 60'	DATE 11-17-08
PARTY B.J. K.G.	REFERENCES G.L.O. PLAT
WEATHER COOL	FILE 2 3 1 1 4

ATTACHMENT B
ANALYTE AND SAMPLE CONTAINER LIST

OXY Analyte and Sample Container List

Analysis		Method	Reporting/Detection Limit	Min. Volume	Container	Preservative	Holding time
BTEx/MTBE	Benzene	SW8021B/ 8015	0.5 µg/L	2 x 40 mL	Glass vial with septum cap	4°C	7 days
	Toluene	"	2.0 µg/L	"	"	"	"
	Ethylbenzene	"	0.5 µg/L	"	"	"	"
	m,p-Xylene	"	1.5 µg/L	"	"	"	"
	o-Xylene	"	1.5 µg/L	"	"	"	"
	MTBE	"	2.0 µg/L	"	"	"	"
Dissolved Methane		SW8015M	0.008 mg/L	3 x 40 mL	Glass vial with septum cap	4°C	7 days
Ammonia		SM 4500-NH3 F/ 350.1	0.10 mg/L	500 mL	Polyethylene bottle	4°C, H ₂ SO ₄	28 days
H ₂ S/Sulfide		SM 4500-S F/9030B/376.2	0.05 mg/L	500 mL	Polyethylene bottle	4°C, Zn Acetate	7 days
Total Metals	Calcium	SW6020/6010B	0.40 mg/L	250 mL	Polyethylene bottle	4°C, HNO ₃	6 months
	Iron	"	0.10 mg/L	"	"	"	"
	Magnesium	"	0.03 mg/L	"	"	"	"
	Manganese	"	0.01 mg/L	"	"	"	"
	Potassium	"	0.13 mg/L	"	"	"	"
	Selenium	"	0.005 mg/L	"	"	"	"
Anions	Sodium	"	0.50 mg/L	"	"	"	"
	Fluoride	SM 4500-F C/9056	0.10 mg/L	250 mL	Polyethylene bottle	4°C	48 hours
	Bromide	E300/9056	0.05 mg/L	"	"	"	"
	Chloride	E300/9056	0.5 mg/L	"	"	"	"
	Nitrate	E300/9056	0.10 mg/L	"	"	"	"
	Nitrite	E300/9056	0.10 mg/L	"	"	"	"
	Sulfate	E300/9056	0.50 mg/L	"	"	"	"
	pH	9040A/E150.1	---	500 mL	Polyethylene bottle	4°C	7 days
	TDS	160.1/SM 2540C	1.0 mg/L	"	"	"	"
Specific Conductivity		9050A	1.0 µmho/cm	"	"	"	"
Total Alkalinity/Bicarbonate/Carbonate		SM2320B/310.2	5.0 mg/L	250 mL	Polyethylene bottle	4°C	24 hours
BART		---	---	125 mL	Polyethylene bottle	4°C	24 hours
Isotopic Gas Analysis		NG-2/SIW	---	1 L	Amber glass bottle with septum cap	4°C	24 hours
				1 L	Plastic bottle with septum cap & bactericide.	4°C	14 days

Olsson Associates
Water Sampling Field Form



Client:	Project #	Date	
Gas well pad:		Olsson Staff	
Landowner:			

Address	Mailing address
Phone(s)	Alternate contact

Sample source	GPS Location
Sample ID	N (NAD 27) W

Description/location (document the sample collection point's physical location on the site and within the water system (i.e. before filtration, before/after pressure tank or storage, etc.)

Well information

Pump: Y () N () Voltage:	Construction (casing material):
Sampling Eq. Used:	Maintenance
Casing diameter (in)	Permit # Age
1 Casing volume (gal)	Use
Water level TOC (ft)	Frequency of use
Total depth TOC (ft)	Well gas methane (ppm)

Purge Information

Start time	Average rate (gpm)/Total Volume (gal)	End
Sample		
Flow rate (gpm)	Time	

Water quality

Observations	Color			
	Odor			
	Sediment			
	Effervescence			
	Other			
Field parameters	Meter			Expected value ranges
	Calibration date			
	Readings	Initial	Final	
	Time			---
	Temp (°C)			0-35
	SpC (mS/cm)			0-12
	DO (mg/L)			0-120
	pH			6.5-9.5
	Salinity (%)			
	TDS (mg/L)			0-6
DO sat (%)			0-400	
Turb (NTU)			0-2,000	

Laboratory Analytes

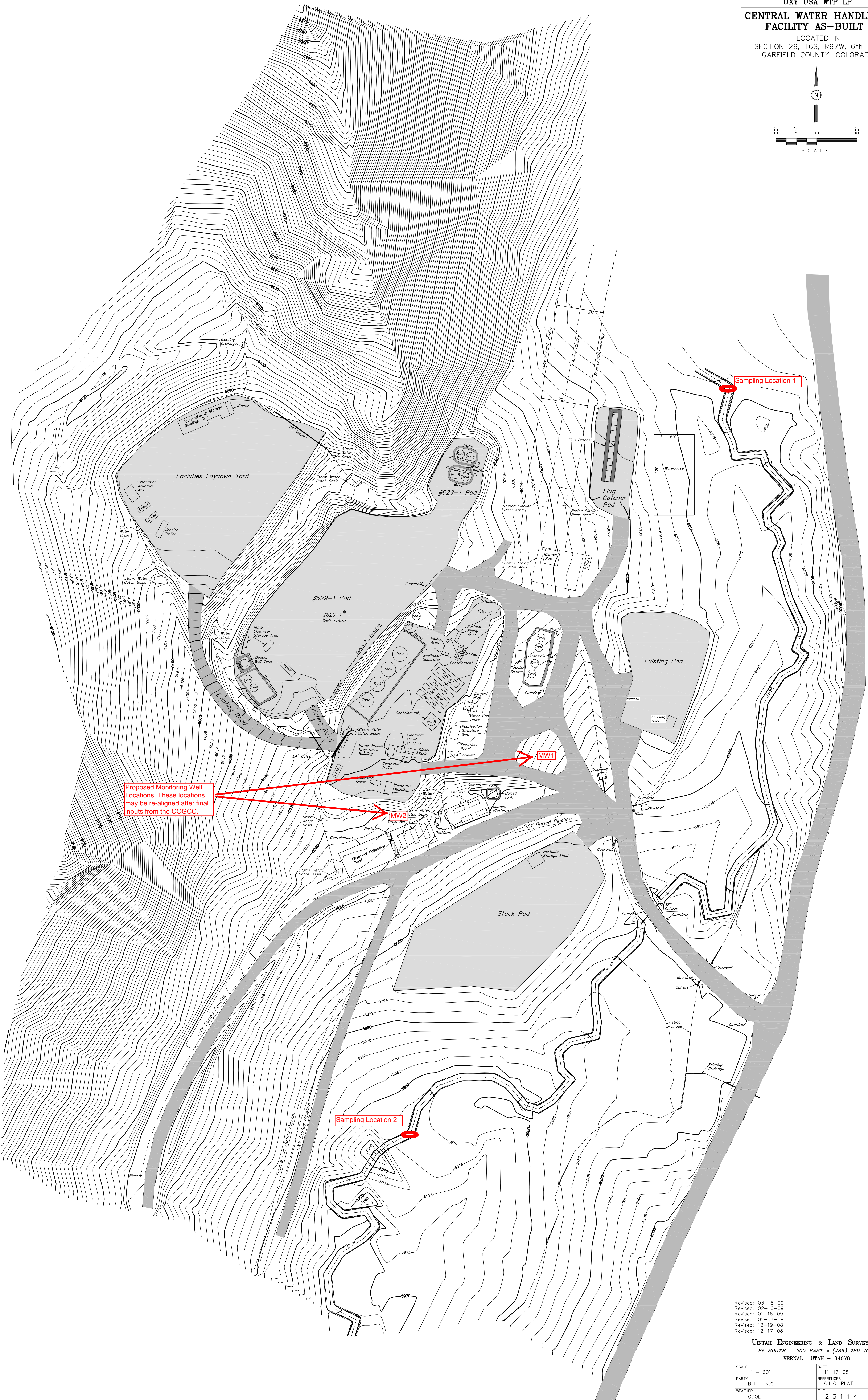
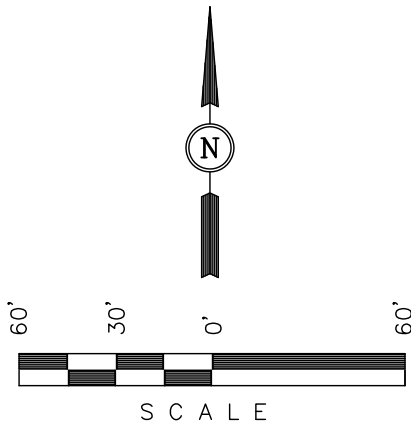
Diss. Meth.	Alk./Carb./Bicarb.	BART	
BTEX	Calcium	Oil & Grease	
MTBE	Iron		
H2S/Sulfide	Potassium		
Ammonia	Magnesium		
Chloride	Manganese		
Nitrate/Nitrite	Selenium		
Sulfate	Sodium		
TDS	pH		
Fluoride	SpC		
Bromide	Other (specify on reverse)		

Landowner Comments

Olsson Associates

Water Sampling Field Form

[illegible]



Revised: 03-18-09
Revised: 02-16-09
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WEATHER COOL	FILE 2 3 1 1 4



United States
Department of
Agriculture



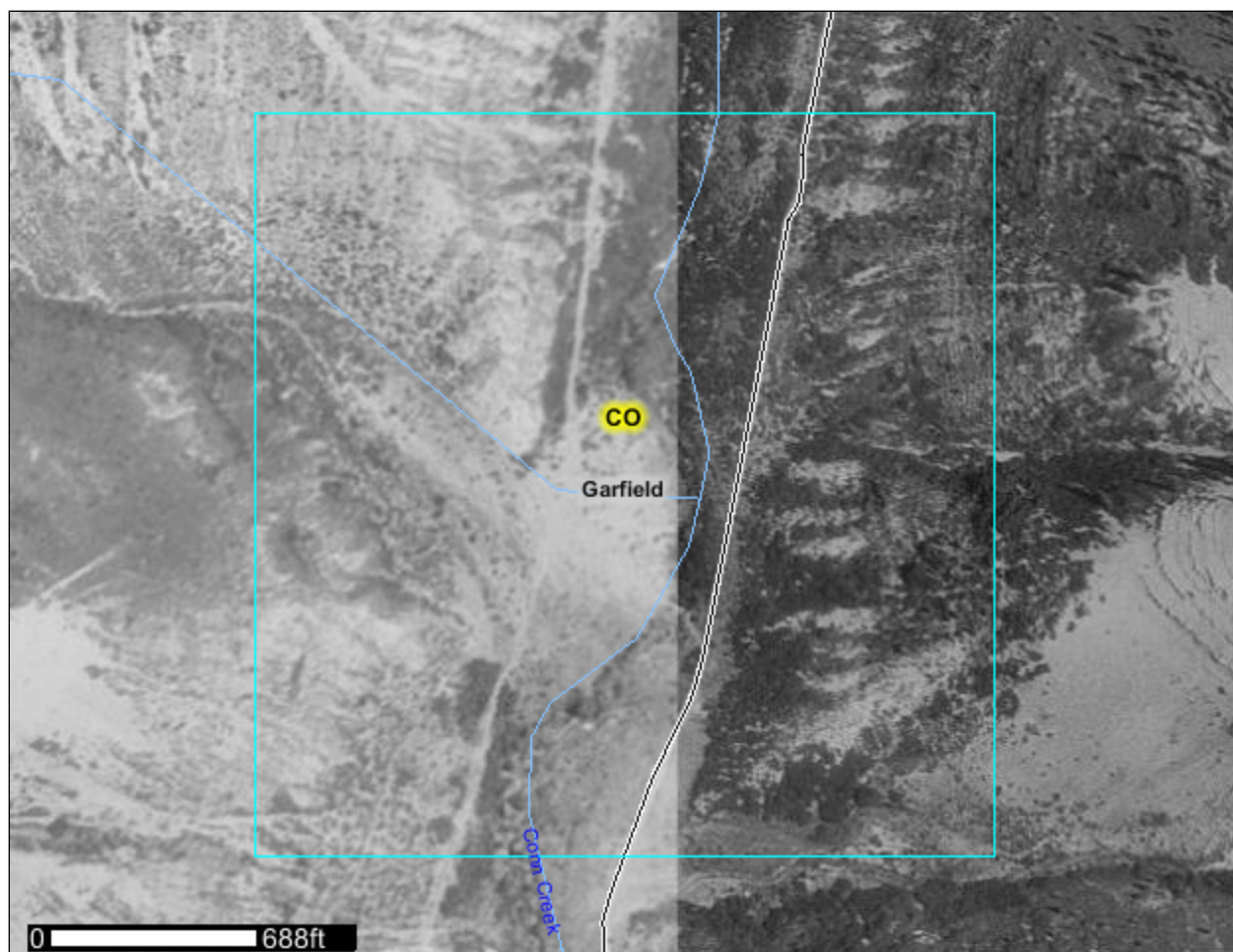
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

009-0420 OXY Water Handling,
Treatment and Storage Facility



January 2, 2010

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://soils.usda.gov/sqi/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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Custom Soil Resource Report

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

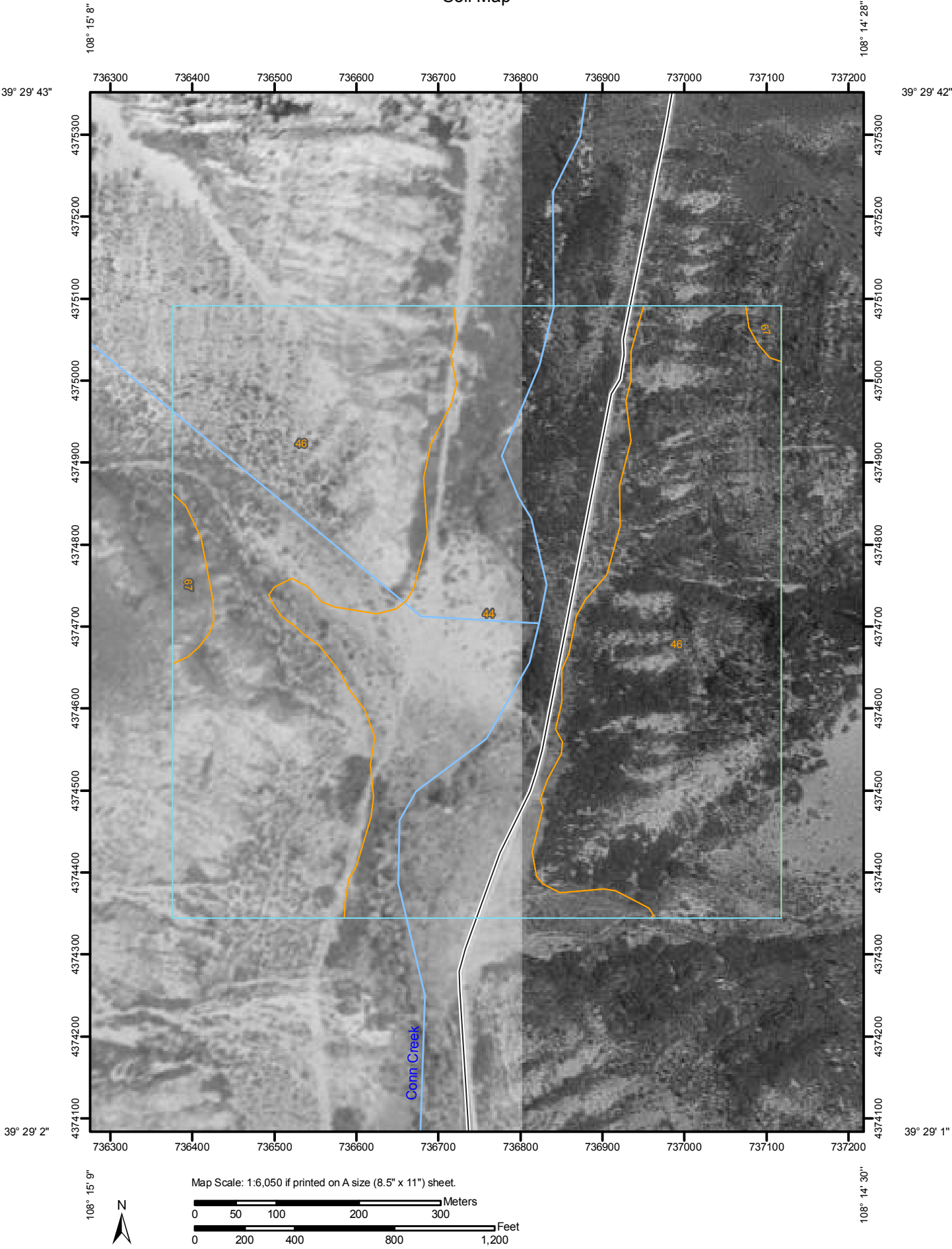
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


Custom Soil Resource Report
Soil Map



Custom Soil Resource Report

MAP LEGEND






















Area of Interest (AOI)




 Area of Interest (AOI)

Soils




 Soil Map Units

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot

-  Very Stony Spot
-  Wet Spot
-  Other



Special Line Features

-  Gully
-  Short Steep Slope
-  Other






Political Features

-  Cities

Water Features

-  Oceans
-  Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties (CO682)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	2.3	1.7%
Totals for Area of Interest		136.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

44—Happle very channery sandy loam, 3 to 12 percent slopes

Map Unit Setting

Elevation: 5,200 to 6,000 feet

Mean annual precipitation: 12 to 15 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 100 to 150 days

Map Unit Composition

Happle and similar soils: 80 percent

Description of Happle

Setting

Landform: Alluvial fans

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Green river formation alluvium derived from shale

Properties and qualities

Slope: 3 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Available water capacity: Low (about 3.4 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Ecological site: Rolling Loam (R034XY298CO)

Typical profile

0 to 7 inches: Very channery sandy loam

7 to 14 inches: Very channery sandy loam

14 to 32 inches: Very channery sandy clay loam

32 to 60 inches: Extremely channery sandy loam

46—Happle-Rock outcrop association, 25 to 65 percent slopes

Map Unit Setting

Elevation: 6,200 to 7,200 feet

Mean annual precipitation: 12 to 15 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 100 to 150 days

Map Unit Composition

Happle and similar soils: 50 percent

Rock outcrop: 35 percent

Description of Happle

Setting

Landform: Canyons, mountains

Landform position (three-dimensional): Mountainflank

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Green river formation colluvium derived from shale

Properties and qualities

Slope: 25 to 65 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Available water capacity: Low (about 3.4 inches)

Interpretive groups

Land capability (nonirrigated): 7e

Ecological site: Steep Colluvial Slopes (R034XY445CO)

Typical profile

0 to 7 inches: Very channery sandy loam

7 to 14 inches: Very channery sandy loam

14 to 32 inches: Very channery sandy clay loam

32 to 60 inches: Extremely channery sandy loam

Description of Rock Outcrop

Properties and qualities

Slope: 40 to 65 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to
0.00 in/hr)

Available water capacity: Very low (about 0.0 inches)

Interpretive groups

Land capability (nonirrigated): 8s

Typical profile

0 to 60 inches: Unweathered bedrock

67—Tosca channery loam, 25 to 80 percent slopes

Map Unit Setting

Elevation: 6,200 to 8,500 feet

Mean annual precipitation: 16 to 20 inches

Mean annual air temperature: 40 to 46 degrees F

Frost-free period: 85 to 110 days

Map Unit Composition

Tosca and similar soils: 80 percent

Description of Tosca

Setting

Landform: Mountains

Landform position (three-dimensional): Lower third of mountainflank

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Green river colluvium derived from shale

Properties and qualities

Slope: 25 to 80 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 40 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: Low (about 5.1 inches)

Interpretive groups

Land capability (nonirrigated): 7e

Ecological site: Brushy Loam (R048AY238CO)

Typical profile

0 to 8 inches: Channery loam

8 to 46 inches: Very channery loam

46 to 60 inches: Very channery loam

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

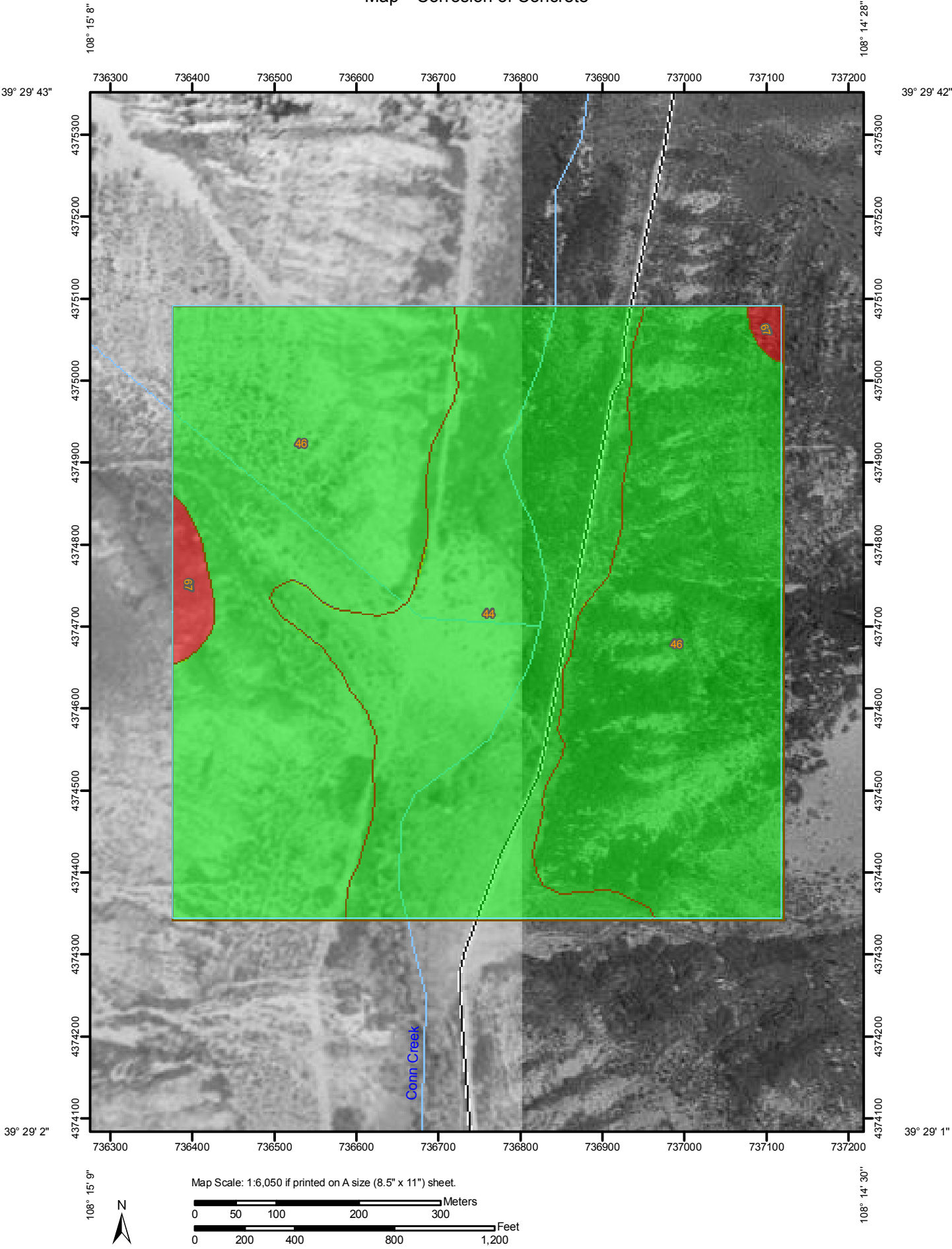
Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Corrosion of Concrete

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens concrete. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the concrete in installations that are entirely within one kind of soil or within one soil layer.

The risk of corrosion is expressed as "low," "moderate," or "high."


Custom Soil Resource Report
Map—Corrosion of Concrete



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

 High

 Moderate


 Low


 Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Corrosion of Concrete

Corrosion of Concrete— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	Low	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	Low	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	High	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Corrosion of Concrete

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

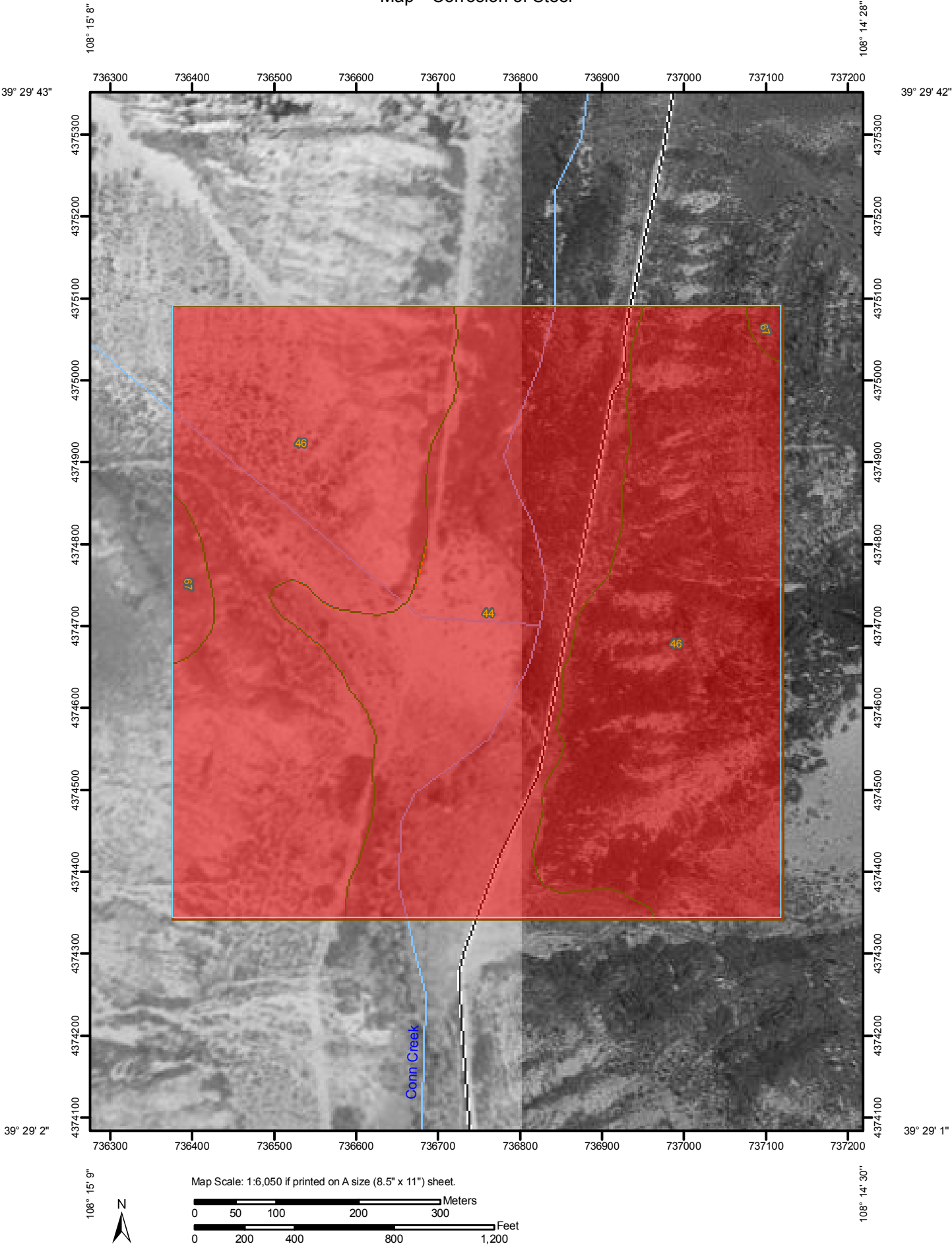
Tie-break Rule: Higher

Corrosion of Steel

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel in installations that are entirely within one kind of soil or within one soil layer.

The risk of corrosion is expressed as "low," "moderate," or "high."


Custom Soil Resource Report
Map—Corrosion of Steel



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils


 Soil Map Units

Soil Ratings

 High

 Moderate

 Low


 Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

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Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

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Table—Corrosion of Steel

Corrosion of Steel— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	High	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	High	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	High	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Corrosion of Steel

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

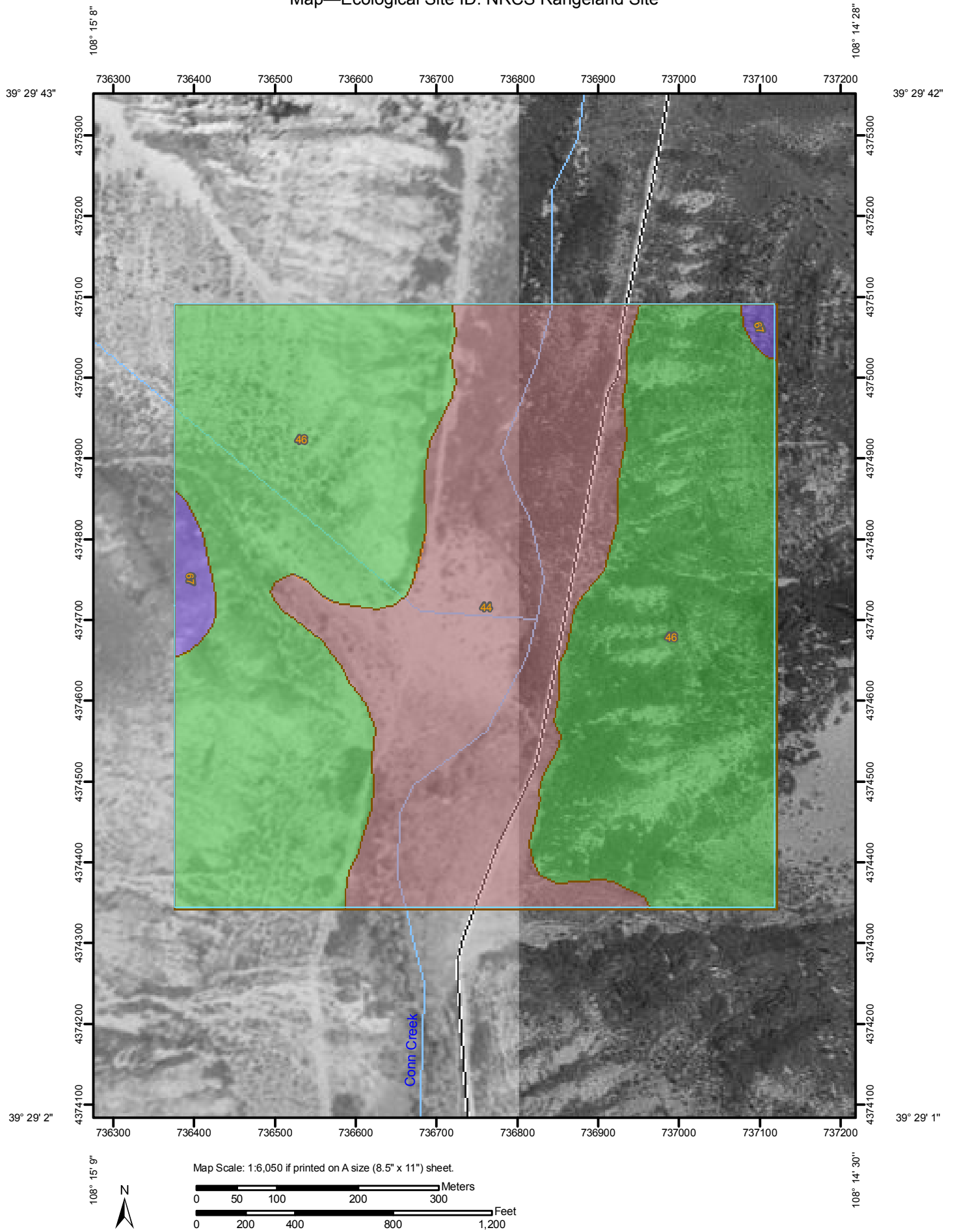
Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Ecological Site ID: NRCS Rangeland Site

An "ecological site ID" is the symbol assigned to a particular ecological site. An "ecological site" is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. For example, the hydrology of the site is influenced by development of the soil and plant community. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.


Custom Soil Resource Report
Map—Ecological Site ID: NRCS Rangeland Site



Custom Soil Resource Report

MAP LEGEND


Area of Interest (AOI)


 Area of Interest (AOI)


Soils


 Soil Map Units

Soil Ratings

 R034XY298CO

 R034XY445CO

 R048AY238CO


 Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Ecological Site ID: NRCS Rangeland Site

Ecological Site ID: NRCS Rangeland Site— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	R034XY298CO	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	R034XY445CO	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	R048AY238CO	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Ecological Site ID: NRCS Rangeland Site*Class:* NRCS Rangeland Site*Aggregation Method:* Dominant Condition*Component Percent Cutoff:* None Specified*Tie-break Rule:* Lower**Land Management**

Land management interpretations are tools designed to guide the user in evaluating existing conditions in planning and predicting the soil response to various land management practices, for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture, and rangeland. Example interpretations include suitability for a variety of irrigation practices, log landings, haul roads and major skid trails, equipment operability, site preparation, suitability for hand and mechanical planting, potential erosion hazard associated with various practices, and ratings for fencing and waterline installation.

Mechanical Site Preparation (Surface)

The ratings in this interpretation indicate the suitability for use of surface-altering soil tillage equipment during site preparation in forested areas. The ratings are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

The ratings are both verbal and numerical. Rating class terms indicate the degree to which the soils are suited to this aspect of forestland management. The soils are described as "well suited," "poorly suited," or "unsuited" to this management activity. "Well suited" indicates that the soil has features that are favorable for the specified kind of site preparation and has no limitations. Good performance can be expected,

Custom Soil Resource Report

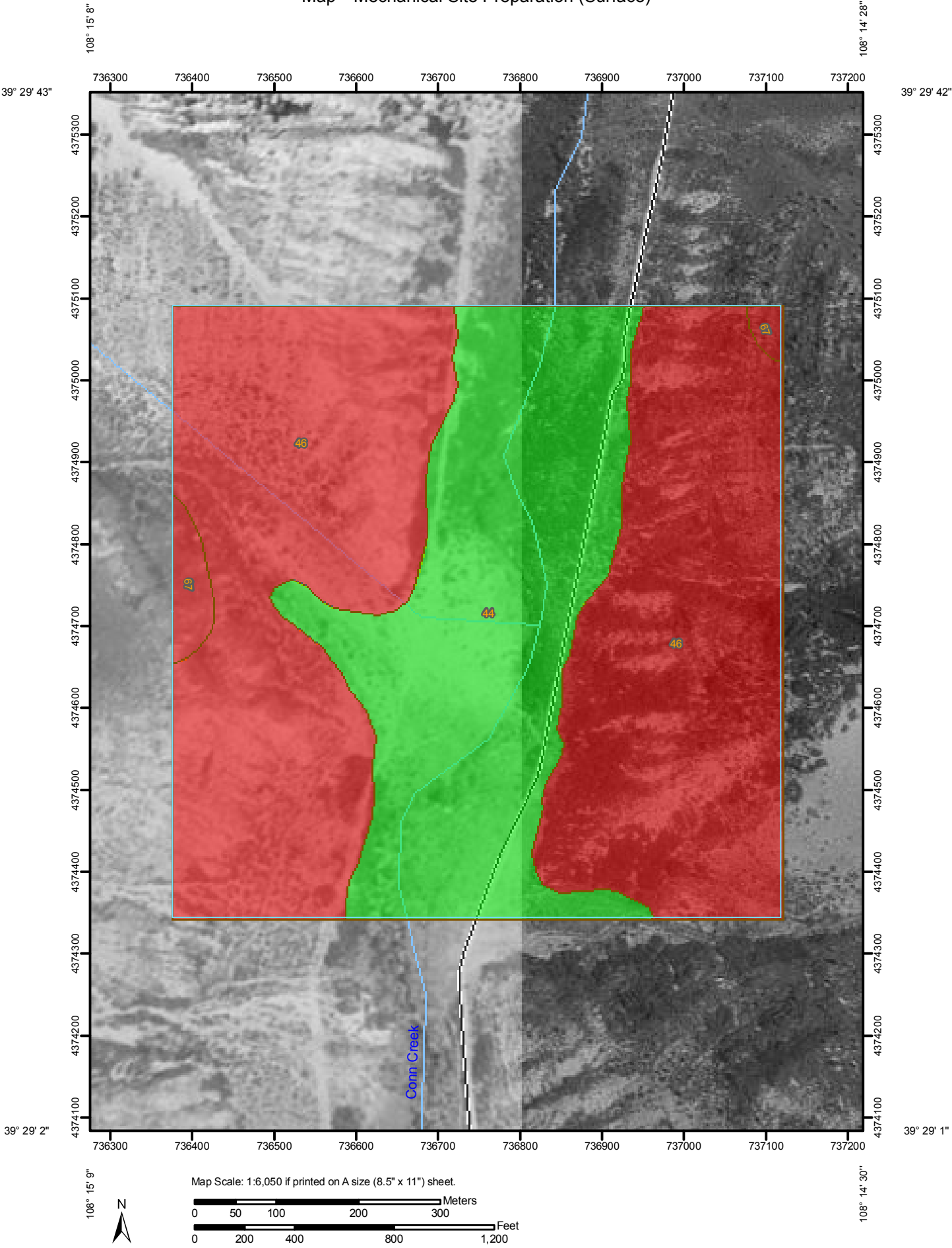
and little or no maintenance is needed. "Poorly suited" indicates that the soil has one or more properties that are unfavorable for the specified kind of site preparation. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. "Unsuited" indicates that the expected performance of the soil is unacceptable for the specified kind of site preparation or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.


Custom Soil Resource Report
Map—Mechanical Site Preparation (Surface)



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)


 Area of Interest (AOI)

Soils


 Soil Map Units

Soil Ratings

 Unsited

 Poorly suited

 Well suited

 Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 12N NAD83

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Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables—Mechanical Site Preparation (Surface)

Mechanical Site Preparation (Surface)— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	Well suited	Happle (80%)		45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	Unsuited	Happle (50%)	Slope (1.00)	89.5	65.4%
			Rock outcrop (35%)	Slope (1.00)		
				Restrictive layer (1.00)		
67	Tosca channery loam, 25 to 80 percent slopes	Unsuited	Tosca (80%)	Slope (1.00)	2.3	1.7%
Totals for Area of Interest					136.9	100.0%

Mechanical Site Preparation (Surface)— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Unsuited	91.8	67.1%
Well suited	45.1	32.9%
Totals for Area of Interest	136.9	100.0%

Rating Options—Mechanical Site Preparation (Surface)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Water Management

Water Management interpretations are tools for evaluating the potential of the soil in the application of various water management practices. Example interpretations include pond reservoir area, embankments, dikes, levees, and excavated ponds.

Excavated Ponds (Aquifer-Fed)

Excavated ponds (aquifer-fed) are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, saturated hydraulic conductivity (Ksat) of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Custom Soil Resource Report

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.


Custom Soil Resource Report
Map—Excavated Ponds (Aquifer-Fed)



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)


 Area of Interest (AOI)


Soils


 Soil Map Units

Soil Ratings

 Very limited

 Somewhat limited

 Not limited


 Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables—Excavated Ponds (Aquifer-Fed)

Excavated Ponds (Aquifer-Fed)— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	Very limited	Happle (80%)	Depth to water (1.00)	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	Very limited	Happle (50%)	Depth to water (1.00)	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	Very limited	Tosca (80%)	Depth to water (1.00)	2.3	1.7%
Totals for Area of Interest					136.9	100.0%

Excavated Ponds (Aquifer-Fed)— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	136.9	100.0%
Totals for Area of Interest	136.9	100.0%

Rating Options—Excavated Ponds (Aquifer-Fed)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Pond Reservoir Areas

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (Ksat) of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

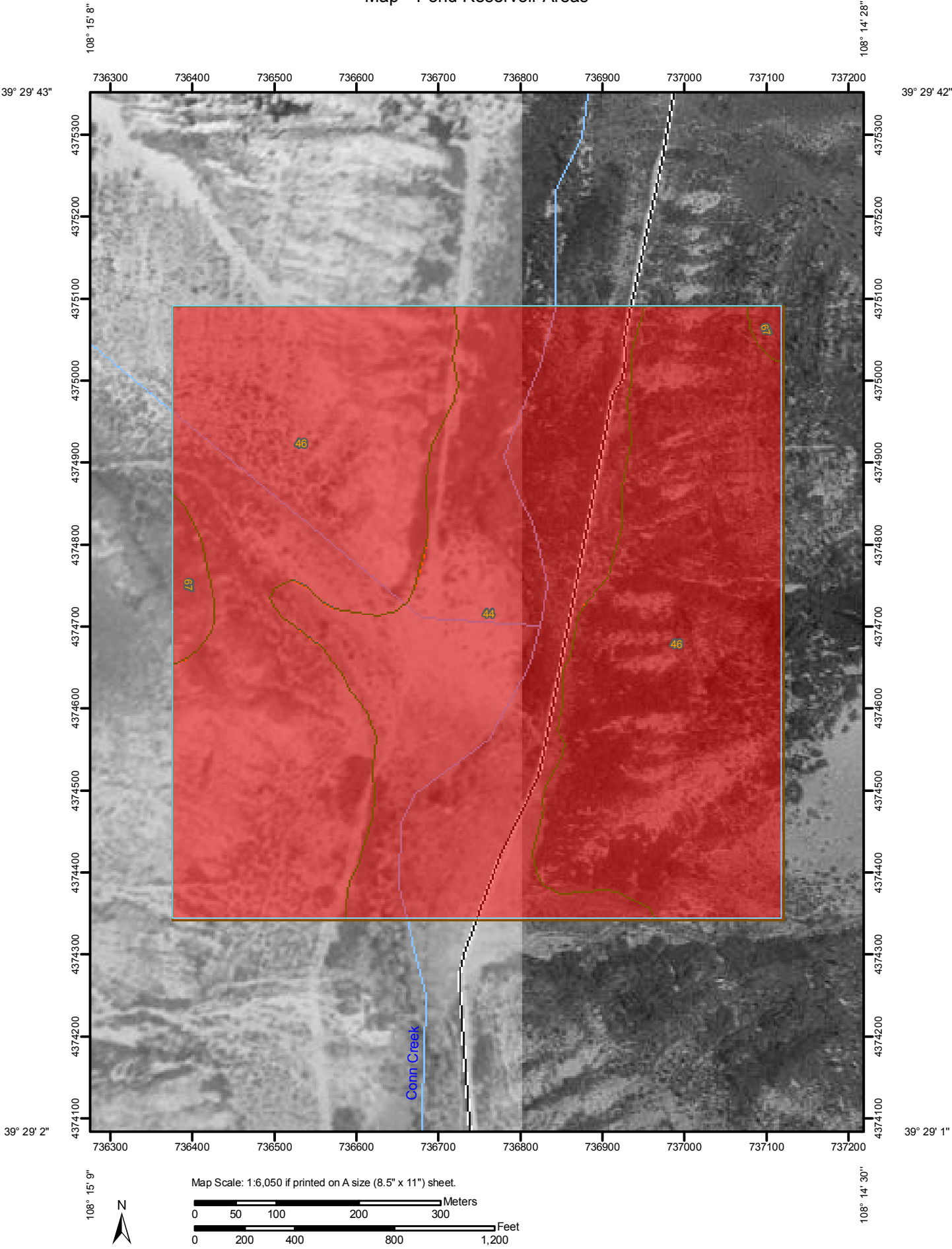
Custom Soil Resource Report

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.


Custom Soil Resource Report
Map—Pond Reservoir Areas



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)


 Area of Interest (AOI)


Soils


 Soil Map Units

Soil Ratings

 Very limited

 Somewhat limited

 Not limited


 Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables—Pond Reservoir Areas

Pond Reservoir Areas— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	Very limited	Happle (80%)	Seepage (1.00)	45.1	32.9%
				Slope (1.00)		
46	Happle-Rock outcrop association, 25 to 65 percent slopes	Very limited	Happle (50%)	Slope (1.00)	89.5	65.4%
				Seepage (1.00)		
			Rock outcrop (35%)	Slope (1.00)		
				Depth to bedrock (1.00)		
67	Tosca channery loam, 25 to 80 percent slopes	Very limited	Tosca (80%)	Seepage (1.00)	2.3	1.7%
				Slope (1.00)		
Totals for Area of Interest					136.9	100.0%

Pond Reservoir Areas— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	136.9	100.0%
Totals for Area of Interest	136.9	100.0%

Rating Options—Pond Reservoir Areas

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

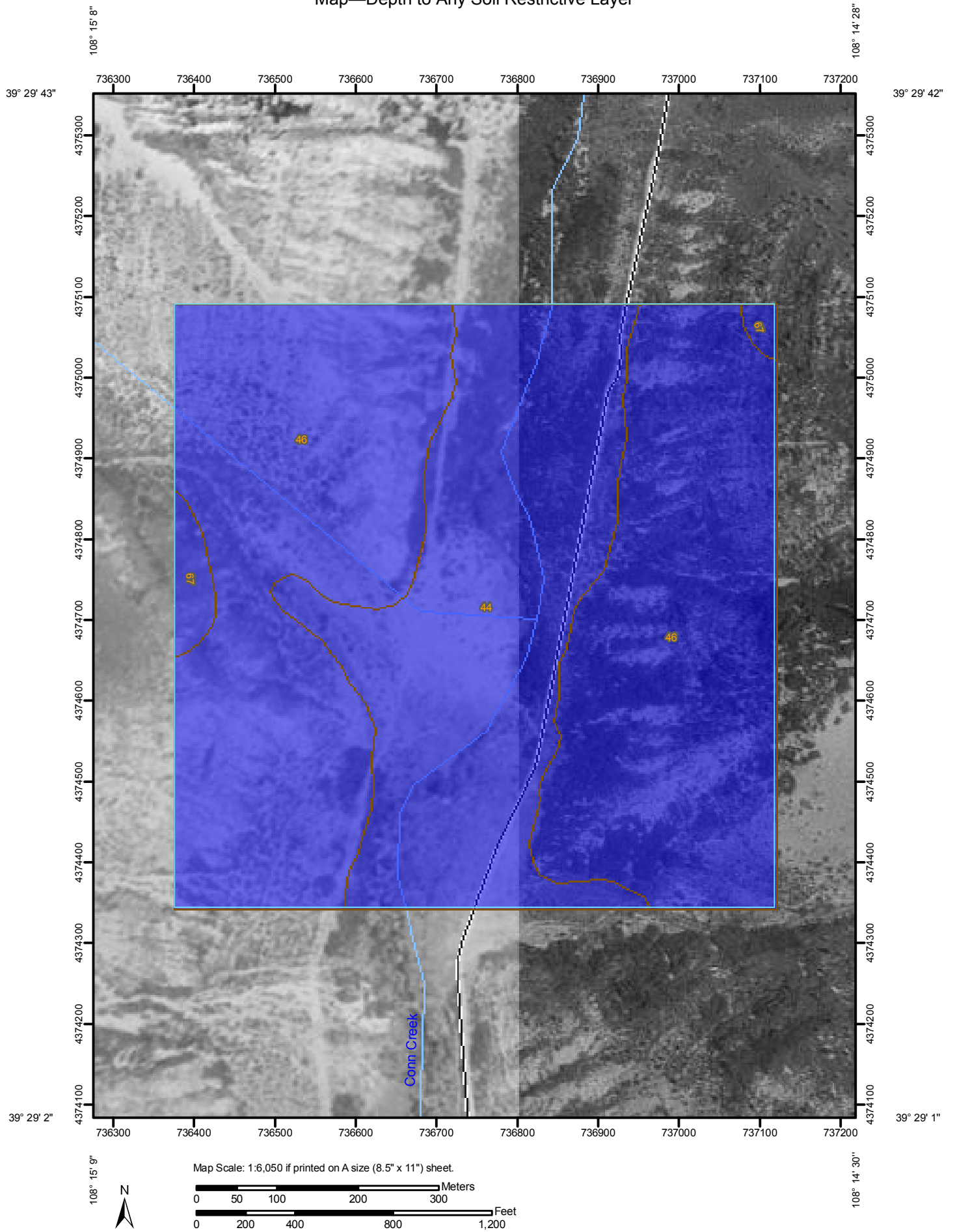
Depth to Any Soil Restrictive Layer

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.


Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer



Custom Soil Resource Report

MAP LEGEND


Area of Interest (AOI)


 Area of Interest (AOI)


Soils


 Soil Map Units


Soil Ratings


 0 - 25

 25 - 50

 50 - 100

 100 - 150

 150 - 200


 > 200

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	>200	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	>200	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	>200	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Depth to Any Soil Restrictive Layer

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

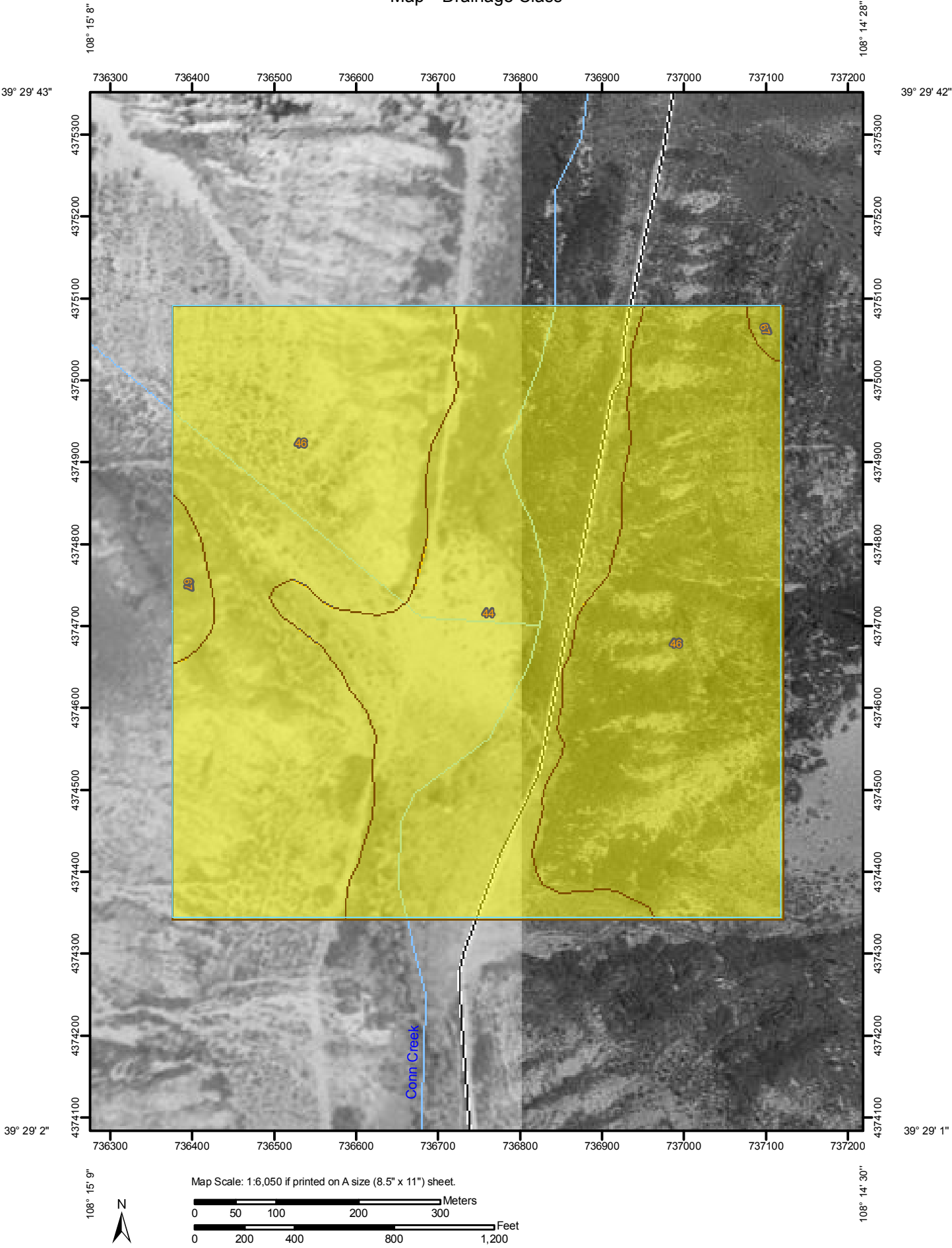
Tie-break Rule: Lower

Interpret Nulls as Zero: No

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."


Custom Soil Resource Report
Map—Drainage Class



Custom Soil Resource Report

MAP LEGEND


Area of Interest (AOI)


 Area of Interest (AOI)

Soils

 Soil Map Units


Soil Ratings

 Excessively drained


 Somewhat excessively drained

 Well drained

 Moderately well drained

 Somewhat poorly drained

 Poorly drained

 Very poorly drained


 Not rated or not available

Political Features

 Cities

Water Features

 Oceans


 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Drainage Class

Drainage Class— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	Well drained	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	Well drained	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	Well drained	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Drainage Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

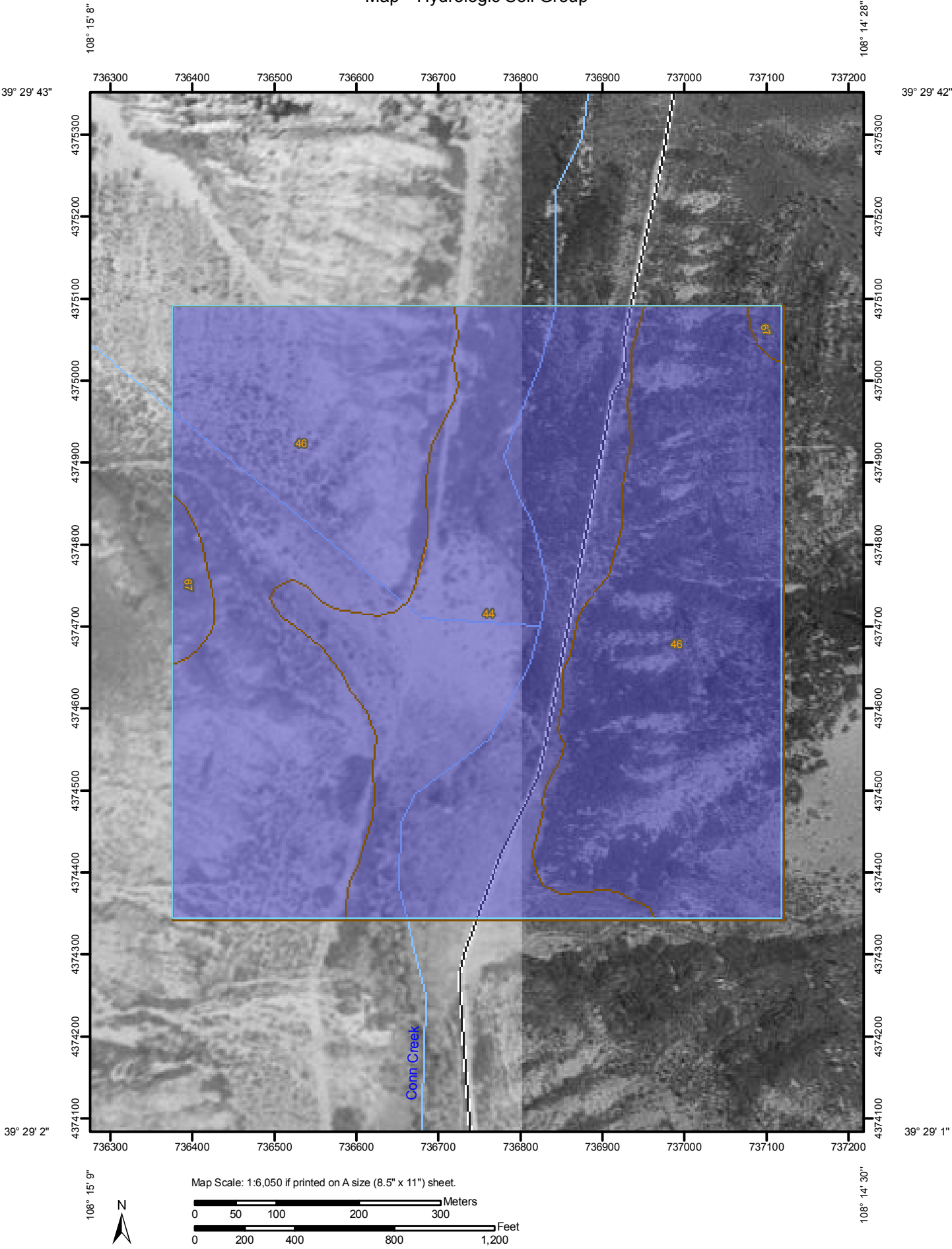
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the

Custom Soil Resource Report

surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.


Custom Soil Resource Report
Map—Hydrologic Soil Group



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

 A

 A/D


 B

 B/D

 C

 C/D

 D


 Not rated or not available

Political Features

 Cities

Water Features

 Oceans


 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	B	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	B	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	B	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

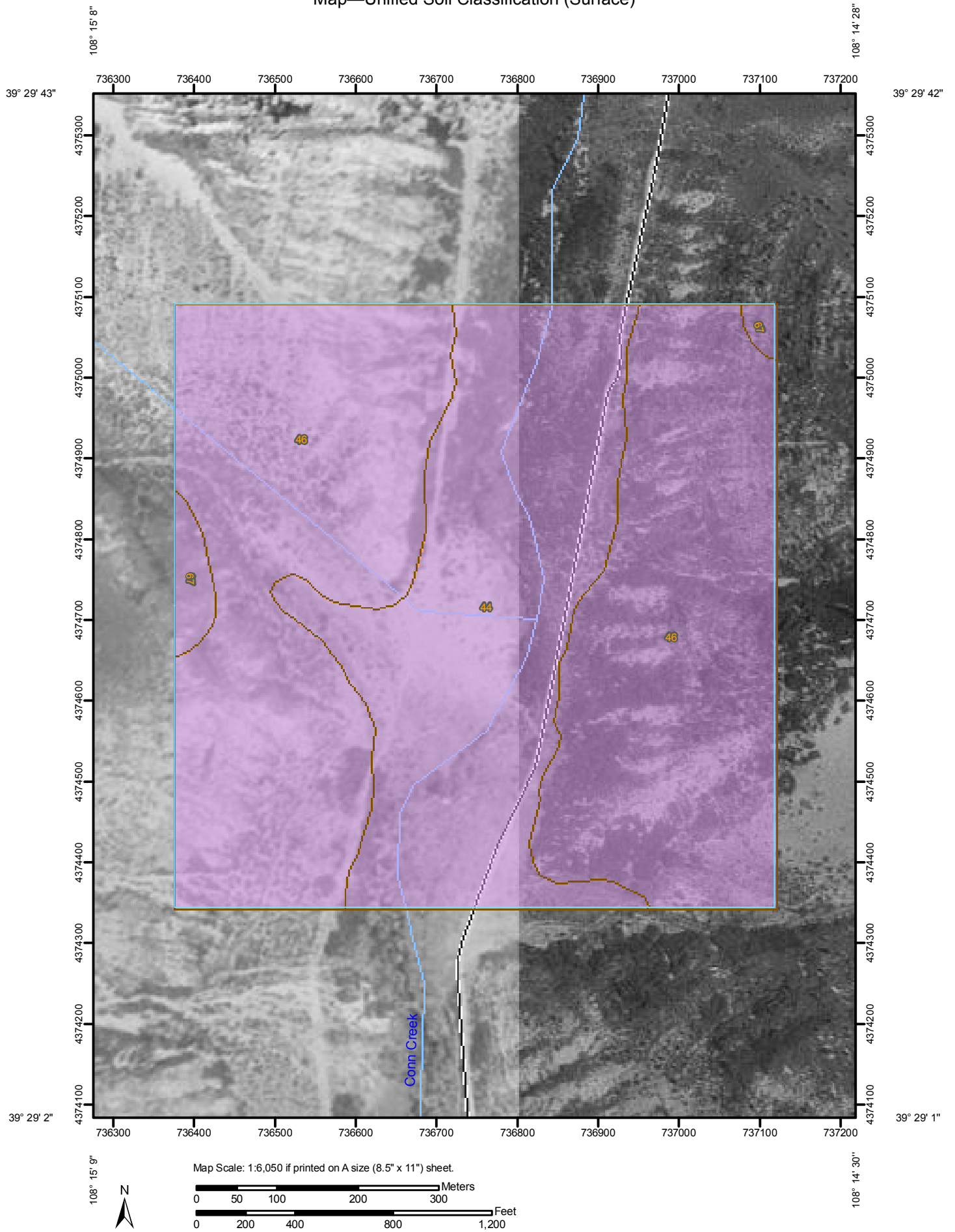
Unified Soil Classification (Surface)

The Unified soil classification system classifies mineral and organic mineral soils for engineering purposes on the basis of particle-size characteristics, liquid limit, and plasticity index. It identifies three major soil divisions: (i) coarse-grained soils having less than 50 percent, by weight, particles smaller than 0.074 mm in diameter; (ii) fine-grained soils having 50 percent or more, by weight, particles smaller than 0.074 mm in diameter; and (iii) highly organic soils that demonstrate certain organic characteristics. These divisions are further subdivided into a total of 15 basic soil groups. The major soil divisions and basic soil groups are determined on the basis of estimated or measured values for grain-size distribution and Atterberg limits. ASTM D 2487 shows the criteria chart used for classifying soil in the Unified system and the 15 basic soil groups of the system and the plasticity chart for the Unified system.

The various groupings of this classification correlate in a general way with the engineering behavior of soils. This correlation provides a useful first step in any field or laboratory investigation for engineering purposes. It can serve to make some general interpretations relating to probable performance of the soil for engineering uses.

For each soil horizon in the database one or more Unified soil classifications may be listed. One is marked as the representative or most commonly occurring. The representative classification is shown here for the surface layer of the soil.


Custom Soil Resource Report
Map—Unified Soil Classification (Surface)



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units


Soil Ratings


 CH


 CL

 CL-A (proposed)

 CL-K (proposed)

 CL-ML

 CL-O (proposed)

 CL-T (proposed)


 GC

 GC-GM

 GM

 GP

 GP-GC


 GP-GM


 GW


 GW-GC


 GW-GM

 MH

 MH-A (proposed)


 MH-K (proposed)


 MH-O (proposed)


 MH-T (proposed)

 ML


 ML-A (proposed)

 ML-K (proposed)

 ML-O (proposed)

 ML-T (proposed)


 OH

 OH-T (proposed)

 OL


 PT


 SC

 SC-SM


 SM


 SP

 SP-SC

 SP-SM

 SW

 SW-SC

 SW-SM

 Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals

Transportation

 Rails



Interstate Highways



US Routes



Major Roads



Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Unified Soil Classification (Surface)

Unified Soil Classification (Surface)— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	GC	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	GC	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	GC	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Unified Soil Classification (Surface)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options: Surface Layer

Water Features

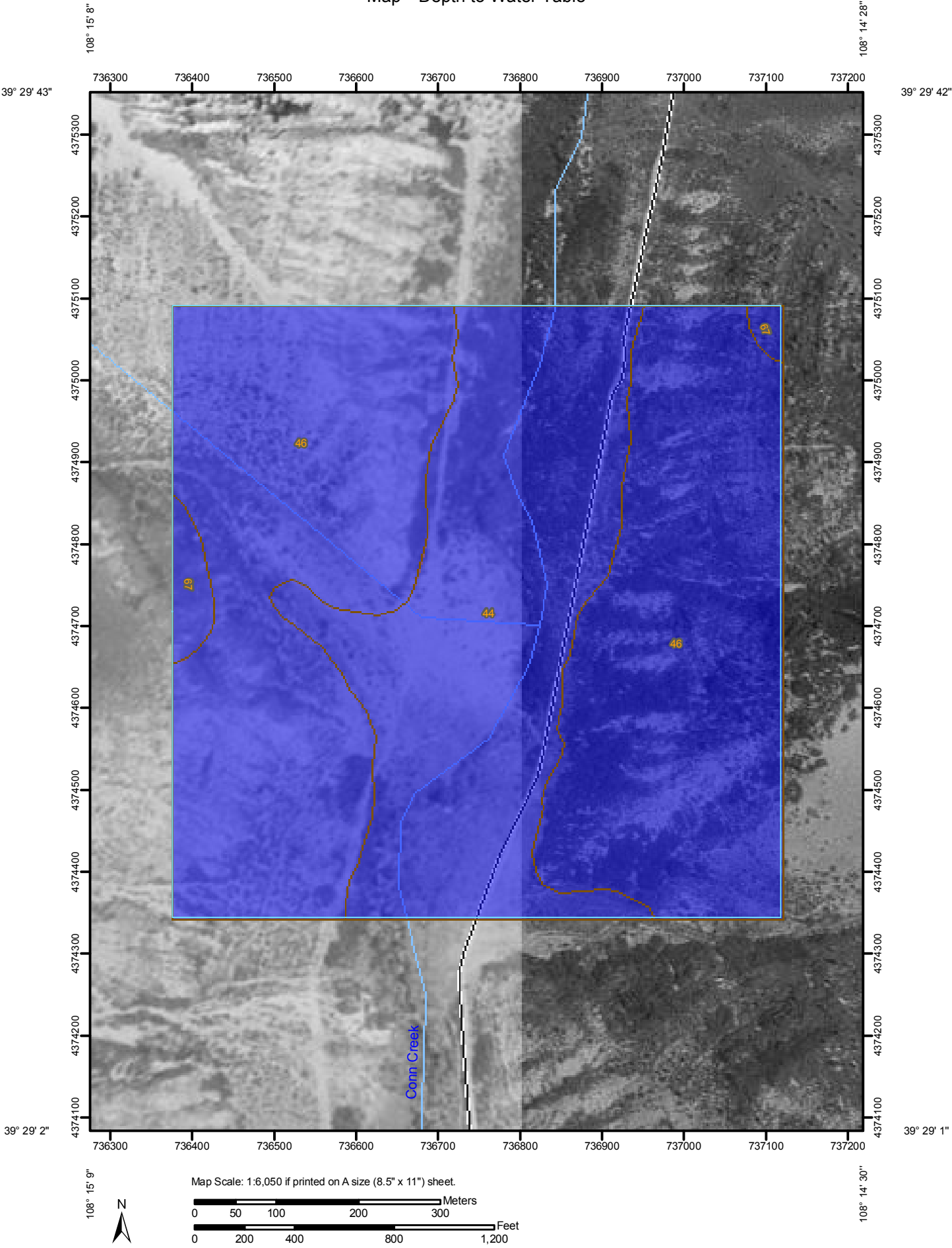
Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.


Custom Soil Resource Report
Map—Depth to Water Table



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)


 Area of Interest (AOI)


Soils


 Soil Map Units


Soil Ratings


 0 - 25

 25 - 50

 50 - 100

 100 - 150

 150 - 200


 > 200

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Water Table

Depth to Water Table— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	>200	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	>200	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	>200	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

Flooding Frequency Class

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

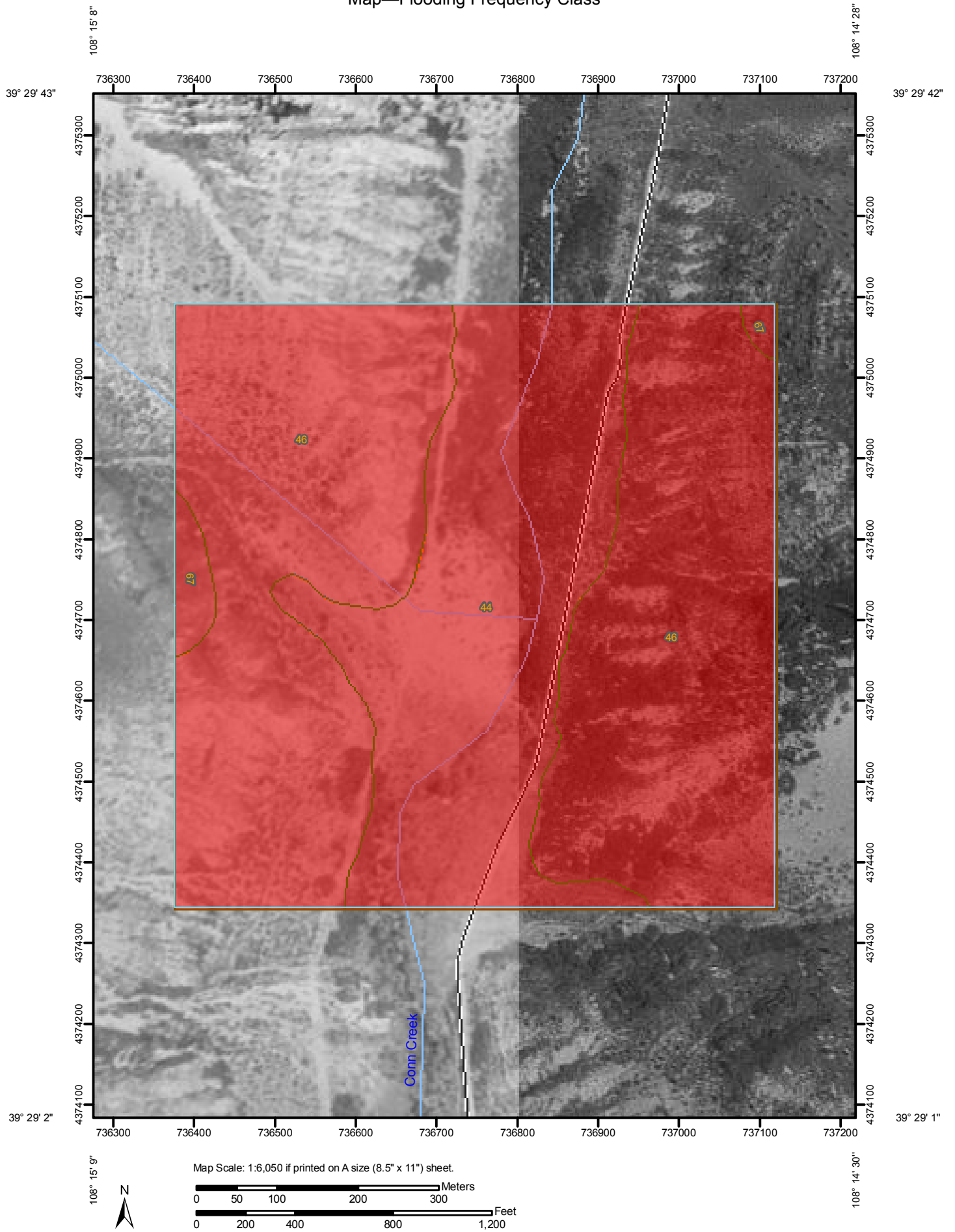
"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.


Custom Soil Resource Report Map—Flooding Frequency Class



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Units

Soil Ratings


 None

 Very Rare

 Rare

 Occasional

 Frequent


 Very Frequent

Political Features

 Cities

Water Features

 Oceans


 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:6,050 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/2/1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Flooding Frequency Class

Flooding Frequency Class— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
44	Happle very channery sandy loam, 3 to 12 percent slopes	None	45.1	32.9%
46	Happle-Rock outcrop association, 25 to 65 percent slopes	None	89.5	65.4%
67	Tosca channery loam, 25 to 80 percent slopes	None	2.3	1.7%
Totals for Area of Interest			136.9	100.0%

Rating Options—Flooding Frequency Class*Aggregation Method:* Dominant Condition*Component Percent Cutoff:* None Specified*Tie-break Rule:* More Frequent*Beginning Month:* January*Ending Month:* December

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Building Site Development

This folder contains a collection of tabular reports that present soil interpretations related to building site development. The reports (tables) include all selected map units and components for each map unit, limiting features and interpretive ratings. Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Roads and Streets, Shallow Excavations, and Lawns and Landscaping

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel,

crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Report—Roads and Streets, Shallow Excavations, and Lawns and Landscaping

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

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Roads and Streets, Shallow Excavations, and Lawns and Landscaping— Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties							
Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44—Happle very channery sandy loam, 3 to 12 percent slopes							
Happle	80	Somewhat limited		Somewhat limited		Very limited	
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	1.00
		Slope	0.01	Slope	0.01	Droughty	0.82
						Large stones content	0.03
						Slope	0.01
46—Happle-Rock outcrop association, 25 to 65 percent slopes							
Happle	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	1.00
						Droughty	0.82
						Large stones content	0.03
Rock outcrop	35	Not rated		Not rated		Not rated	
67—Tosca channery loam, 25 to 80 percent slopes							
Tosca	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.68
						Droughty	0.13

Land Classifications

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Taxonomic Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2003). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. This table shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisols.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalfs (*Ud*, meaning humid, plus *alfs*, from Alfisols).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalfs*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

References:

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. (The soils in a given survey area may have been classified according to earlier editions of this publication.)

Report—Taxonomic Classification of the Soils

[An asterisk by the soil name indicates a taxadjunct to the series]

Taxonomic Classification of the Soils— Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties	
Soil name	Family or higher taxonomic classification
Happle	Loamy-skeletal, mixed (calcareous), mesic Ustic Torriorthents
Rock outcrop	
Tosca	Loamy-skeletal, mixed Typic Calciborolls

Soil Chemical Properties

This folder contains a collection of tabular reports that present soil chemical properties. The reports (tables) include all selected map units and components for each map unit. Soil chemical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil chemical properties include pH, cation exchange capacity, calcium carbonate, gypsum, and electrical conductivity.

Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

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Chemical Soil Properties— Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
44—Happle very channery sandy loam, 3 to 12 percent slopes								
Happle	0-7	5.0-15	—	7.4-8.4	5-10	0	0.0-2.0	0
	7-14	4.0-10	—	7.4-8.4	5-10	0	0.0-2.0	0
	14-32	5.0-20	—	7.4-8.4	5-10	0	0.0-2.0	0
	32-60	4.0-10	—	7.4-8.4	5-10	0	0.0-2.0	0
46—Happle-Rock outcrop association, 25 to 65 percent slopes								
Happle	0-7	5.0-15	—	7.4-8.4	5-10	0	0.0-2.0	0
	7-14	4.0-10	—	7.4-8.4	5-10	0	0.0-2.0	0
	14-32	5.0-20	—	7.4-8.4	5-10	0	0.0-2.0	0
	32-60	4.0-10	—	7.4-8.4	5-10	0	0.0-2.0	0
Rock outcrop	0-60	—	—	—	—	—	0	—
67—Tosca channery loam, 25 to 80 percent slopes								
Tosca	0-8	5.0-15	—	7.4-8.4	1-10	0	0.0-2.0	0
	8-46	3.0-10	—	7.9-9.0	15-40	0	0.0-2.0	0-5
	46-60	4.0-10	—	7.9-9.0	15-20	0	0.0-2.0	0-5

Soil Physical Properties

This folder contains a collection of tabular reports that present soil physical properties. The reports (tables) include all selected map units and components for each map unit. Soil physical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (K_{sat}), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots.

Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

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Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service.
National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

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Physical Soil Properties– Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
44—Happle very channery sandy loam, 3 to 12 percent slopes														
Happle	0-7	-65-	-19-	12-16- 20	1.35-1.50	4.23-42.34	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28	5	8	0
	7-14	-65-	-19-	12-16- 20	1.35-1.50	4.23-42.34	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32			
	14-32	-57-	-18-	20-25- 30	1.25-1.40	4.00-14.11	0.07-0.09	0.0-2.9	0.0-0.5	.10	.24			
	32-60	-66-	-19-	10-15- 20	1.35-1.50	4.23-42.34	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32			
46—Happle- Rock outcrop association, 25 to 65 percent slopes														
Happle	0-7	-65-	-19-	12-16- 20	1.35-1.50	4.23-42.34	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28	5	8	0
	7-14	-65-	-19-	12-16- 20	1.35-1.50	4.23-42.34	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32			
	14-32	-57-	-18-	20-25- 30	1.25-1.40	4.00-14.11	0.07-0.09	0.0-2.9	0.0-0.5	.10	.24			
	32-60	-66-	-19-	10-15- 20	1.35-1.50	4.23-42.34	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32			
Rock outcrop	0-60	—	—	—	—	0.00-0.03	0.00	—	—				8	0
67—Tosca channery loam, 25 to 80 percent slopes														
Tosca	0-8	-44-	-41-	12-15- 18	1.25-1.40	14.11-42.34	0.10-0.13	0.0-2.9	1.0-3.0	.15	.28	2	4L	86
	8-46	-44-	-41-	12-15- 18	1.25-1.40	4.00-14.00	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37			
	46-60	-44-	-41-	12-15- 18	1.25-1.40	14.11-42.34	0.07-0.09	0.0-2.9	0.0-0.5	.15	.43			

Soil Qualities and Features

This folder contains tabular reports that present various soil qualities and features. The reports (tables) include all selected map units and components for each map unit. Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A restrictive layer is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel

Custom Soil Resource Report

or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Custom Soil Resource Report

Soil Features– Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		<i>In</i>	<i>In</i>		<i>In</i>	<i>In</i>			
44—Happle very channery sandy loam, 3 to 12 percent slopes									
Happle		—	—		0	—	Moderate	High	Low
46—Happle-Rock outcrop association, 25 to 65 percent slopes									
Happle		—	—		0	—	Moderate	High	Low
Rock outcrop	Lithic bedrock	0	—	Indurated	0	—	None		
67—Tosca channery loam, 25 to 80 percent slopes									
Tosca		—	—		0	—	Moderate	High	High

Water Management

This folder contains a collection of tabular reports that present soil interpretations related to water management. The reports (tables) include all selected map units and components for each map unit, limiting features and interpretive ratings. Water management interpretations are tools for evaluating the potential of the soil in the application of various water management practices. Example interpretations include pond reservoir area, embankments, dikes, levees, and excavated ponds.

Ponds and Embankments

This table gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (Ksat) of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or

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salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, Ksat of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Report—Ponds and Embankments

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Ponds and Embankments— Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties							
Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44—Happle very channery sandy loam, 3 to 12 percent slopes							
Happle	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.75	Depth to water	1.00
		Slope	1.00				

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Ponds and Embankments— Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties							
Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
46—Happle-Rock outcrop association, 25 to 65 percent slopes							
Happle	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.75	Depth to water	1.00
		Seepage	1.00				
Rock outcrop	35	Very limited		Not rated		Not rated	
		Slope	1.00				
		Depth to bedrock	1.00				
67—Tosca channery loam, 25 to 80 percent slopes							
Tosca	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.25	Depth to water	1.00
		Slope	1.00				

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GEOLOGIC AND SOIL HAZARDS REPORT

Surficial Geology and Soils

The surficial geology of the subject property is shown on Figure 1. The location for the proposed Water Treatment and Storage facility is underlain by the lower part of the Green River Formation. This part of the Green River Formation consists of shale, mudstone and sandstones. The cliffs and plateau to the west of the location are comprised of the Parachute Creek Member of the Green River Formation and consist of oil shale, sandstone and mudstone. The rocks of the Green River Formation are the parent material for the soils that occur at this location. Figure 2 provides a soils map for the location of the proposed facility. This location is primarily underlain by soils of the Happle very channery sandy loam, 3 to 12 percent slopes (soil unit 44 on Figure 2), however, the northwestern most storage area is underlain by the Happle-Rock outcrop association 25 to 65 percent slopes (soil unit 46 on Figure 2). The Happle very channery sandy loam is a very well drained soil that is typically up to 60-inches thick. The Happle-Rock outcrop association is a well drained soil that may reach 60-inches thick but is typically much thinner and underlain by bedrock. Limitations of these soils in relation to the proposed project are discussed in detail below.

Geologic and Soil Hazards

The Natural Resources Conservation Service (NRCS) soils report for this area provides information regarding the suitability or limitations of these soils for the proposed use – shallow excavations and roads. The primary limitations identified by the NRCS for this proposed use are based on the slopes, limited depth to bedrock and the potential for cutbanks to cave. These limitations are most pronounced in the northwestern portion of the site where a storage facility is proposed. Consideration will need to be given to the design and construction of this facility to ensure that slopes are graded appropriately to minimize the potential for cutbank caving. In addition, the Happle-Rock outcrop association soils are noted as having a severe erosion hazard. Design considerations to stabilize slopes and control drainage and stormwater runoff will be required to minimize erosion. The NRCS also identifies these soils as having very limited capability for landscaping due to high gravel content and the droughty nature of this area. This limitation will need to be considered in the design and implementation of any landscaping for this facility.

The proposed Water Treatment and Storage Facility is situated to the west of Conn Creek on an alluvial fan formed at the base of a steep drainage off of the plateau to the west. Ground cover consists primarily of dry grasses and sagebrush, with some pinon. No geologic hazards have been mapped by Garfield County in this area and no faults or other hazards are evident on the Geologic Map of Colorado. However, evidence of land instability is visible in proximity to the site. Rock fall from the canyon walls is common. The wide, shallow, and steep channels of streams and drainages experience flash flooding and occasional debris flow during prolonged or extreme storm events. The nearest perennial surface water feature is Conn Creek which flows north to south and is located adjacent to the proposed facility, however, numerous dry channels, including a relatively large drainage immediately to the west of the facility, transect the steep slopes to the west of the facility and will carry water during storm events. Geologic hazard potential is likely high to very high and consideration of rock fall and debris flow need to be considered in the design and construction of the facility.

Doug Dennison
Associate Geologist



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Pointer 39°29'19.16" N 108°14'54.68" W elev 6027 ft

Streaming 100%

Eye alt 12619 ft



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Starting Year 1947 | Ending Year 2009

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Plot

Total Annual Precipitation • 1947-2009

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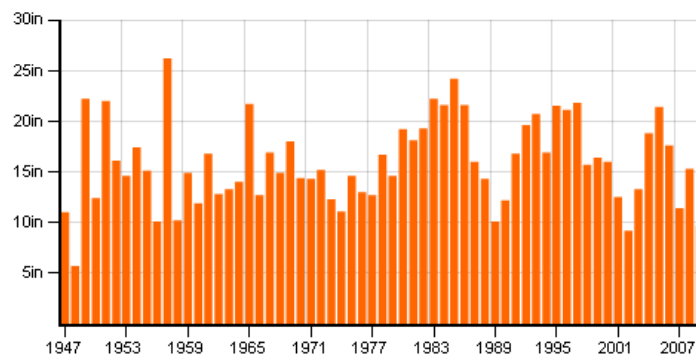


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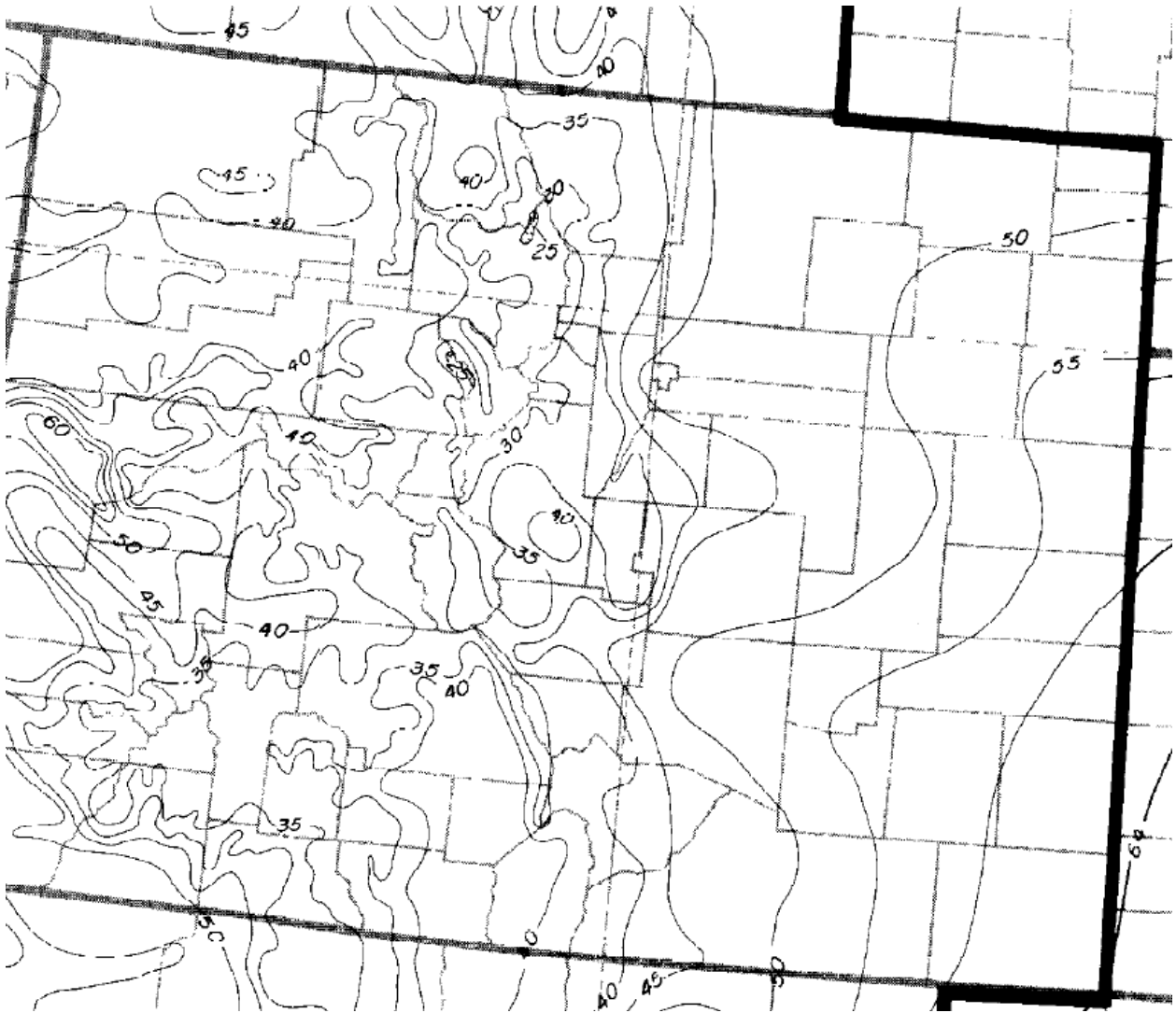


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Monthly Climatic Data for ALTENBERN for years 1947 - 2009
 Station - 50214 Latitude - 3935 Longitude - 10832 Elevation - 6800

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	
Total monthly precipitation.														
1947	M	M	M		M	M	M	M		99	255	125	235	177
1948	M	M	M		M	M	M	M		89	21	168	92	200
1949	270	67	177	117	304	203	167	50	237	274	74	282	22.22	
1950	282	102	24	131	71	1	143	9	219	28	106	128	12.44	
1951	102	119	78	280	189	86	100	376	19	245	128	480	22.02	
1952	282	90	303	63	78	122	106	393	26	0	55	89	16.07	
1953	152	26	215	115	165	57	129	206	6	169	177	43	14.6	
1954	216	119	211	104	62	59	128	182	265	165	137	89	17.37	
1955	186	192	7	66	160	62	116	259	58	45	224	137	15.12	
1956	227	140	16	112	72	22	111	113	0	98	191	84	10.14	
1957	354	168	189	264	215	212	155	400	32	305	236	93	26.23	
1958	29	170	204	90	48	0	24	32	241	23	124	36	10.21	
1959	99	206	53	105	41	168	53	275	190	113	52	139	14.94	
1960	103	183	161	114	52	53	32	73	108	102	132	79	11.92	
1961	0	37	190	117	175	13	122	216	474	133	124	77	16.78	
1962	204	386	62	92	80	49	26	66	156	45	62	53	12.81	
1963	152	96	119	162	10	99	72	330	123	55	96	20	13.34	
1964	110	16	142	165	93	96	138	162	80	0	147	251	14	
1965	109	46	126	271	214	177	273	263	276	40	188	191	21.74	
1966	39	129	74	60	119	26	94	115	29	133	76	377	12.71	
1967	116	20	77	94	200	258	254	232	110	85	63	182	16.91	
1968	51	141	86	163	136	47	150	369	23	148	75	100	14.89	
1969	401	113	25	62	57	345	56	165	145	276	92	63	18	
1970	61	53	204	156	13	128	139	101	157	125	215	89	14.41	
1971	50	33	32	105	158	4	77	224	182	309	36	221	14.31	
1972	0	0	9	70	142	311	48	64	166	401	111	199	15.21	
1973	70	74	167	94	124	179	153	28	72	31	114	119	12.25	
1974	206	19	133	89	0	84	87	54	136	122	94	81	11.05	
1975	84	110	284	193	218	65	129	58	89	78	88	67	14.63	
1976	39	315	138	105	142	97	183	89	81	95	3	14	13.01	
1977	82	27	130	47	133	4	104	287	102	133	107	118	12.74	
1978	216	203	355	208	63	10	27	18	57	12	312	185	16.66	
1979	122	169	314	53	362	23	32	151	6	79	132	17	14.6	
1980	404	340	231	86	318	1	98	99	48	194	74	22	19.15	
1981	70	48	163	20	331	92	203	169	88	418	100	112	18.14	
1982	171	37	174	63	111	34	95	119	436	190	384	112	19.26	
1983	56	132	156	221	326	275	175	56	150	204	229	238	22.18	
1984	68	20	176	194	129	360	154	142	111	429	74	304	21.61	
1985	101	62	294	281	191	85	294	19	273	271	459	87	24.17	
1986	49	162	196	188	157	13	320	317	382	197	142	34	21.57	
1987	119	55	153	64	182	124	167	236	36	143	171	151	16.01	
1988	132	34	115	186	118	100	106	145	144	19	189	137	14.25	
1989	74	190	106	54	43	33	44	152	118	81	85	25	10.05	
1990	46	137	106	186	33	18	157	140	129	106	92	65	12.15	
1991	70	76	280	123	56	84	229	149	232	198	124	63	16.84	
1992	48	1451	168	120	422	37	301	80	69	260	144	167	19.61	
1993	276	268	318	202	393	43	15	95	62	268	86	47	20.73	
1994	24	162	60	300	101	43	28	203	260	187	196	126	16.9	
1995	117	150	193	142	414	178	221	265	257	62	64	84	21.47	
1996	155	345	86	184	102	164	177	46	215	276	232	129	21.11	
1997	260	49	21	280	228	56	72	238	509	294	119	56	21.82	
1998	117	219	182	161	45	189	134	36	136	202	93	59	15.73	
1999	73	81	27	416	245	80	174	215	206	30	45	47	16.39	
2000	103	193	186	78	125	116	53	195	172	159	121	97	15.98	
2001	37	82	116	185	233	T	69	256	48	157	M	70		
2002	33	26	58	83	22	T	29	70	225	206	108	55	9.15	
2003	37	89	120	92	247	91	58	86	172	6	244	90	13.32	
2004	69	161	12	298	71	36	195	78	357	332	167	106	18.82	
2005	346	208	190	129	M	310	33	270	245	230	82	94		
2006	103	16	299	149	21	29	M	242	238	496	123	43		
2007	47	131	80	142	88	35	120	234	261	M	M	M		
2008	234	148	59	106	188	43	117	123	94	121	144	153	15.3	
2009	M	M	721	156	214	204	193	14	1151	M	M	M		
Ave	1.31	1.22	1.43	1.44	1.51	0.97	1.24	1.62	1.56	1.64	1.33	1.19	16.34	
Max	4.04	3.86	3.55	4.16	4.22	3.6	3.2	4	5.09	4.96	4.59	4.8	26.23	
Year	1980	1962	1978	1999	1992	1984	1986	1957	1997	2006	1985	1951		
Min	0	0	0.07	0.2	0	0	0.15	0.09	0	0	0.03	0.14	9.15	
Year	1972+	1972	1955	1981	1974	2002+	1993	1950	1956	1964+	1976	1976		
Count	60	60	61	61	60	61	61	63	63	61	60	61	56	

Monthly Pan Evaporation Rates

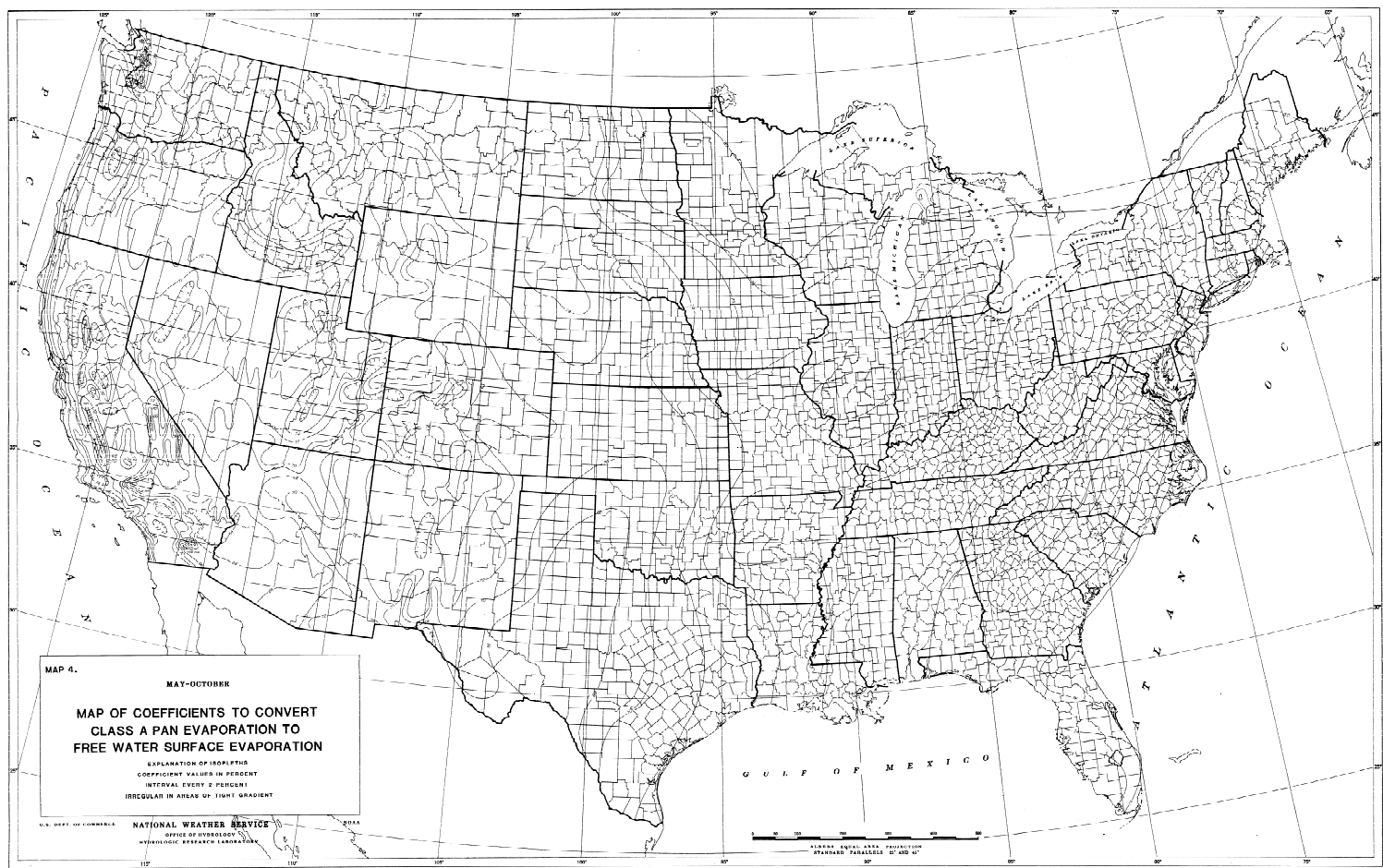


Excerpted from the *Class A Evaporation Map* prepared by the National Weather Service (NOAA Technical Report NWS 33).









COLORADO

MONTHLY AVERAGE PAN EVAPORATION (INCHES)

	PERIOD OF RECORD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
AKRON 4 E	1918-2005	0.00	0.00	0.00	7.30	9.29	11.43	13.26	11.16	9.09	6.16	0.00	0.00	67.69
ALAMOSA WSO AP	1948-2005	0.00	0.00	0.00	7.06	9.01	10.08	9.16	7.81	6.40	4.39	0.00	0.00	53.91
ARBOLES	1957-1963	0.00	0.00	0.00	5.41	7.95	9.56	9.78	8.61	6.52	0.00	0.00	0.00	47.83
BONNY LAKE	1949-2005	0.00	0.00	0.00	7.26	8.69	10.86	11.78	10.61	8.12	6.12	4.57	0.00	68.01
CLIMAX	1949-2005	0.00	0.00	0.00	0.00	0.00	5.36	5.32	4.44	3.41	0.00	0.00	0.00	18.53
CONEJOS 3 NNW	1948-1960	0.00	0.00	0.00	6.30	7.14	7.67	7.41	6.87	7.19	5.74	0.00	0.00	48.32
ESTES PARK	1948-1994	0.00	0.00	0.00	5.78	5.26	7.09	7.13	6.15	5.04	4.04	0.00	0.00	40.49
FORT COLLINS	1900-2005	0.00	0.00	2.50	4.52	5.42	6.32	6.92	6.07	4.74	3.07	1.48	0.00	41.04
GRAND JUNCTION WALKER	1900-2005	0.00	0.00	4.67	8.53	12.18	15.96	16.53	14.02	10.98	7.05	2.42	0.00	92.34
GRAND JUNCTION 6 ESE	1962-2005	0.00	0.00	0.00	6.60	9.29	11.77	12.01	10.24	7.48	4.65	2.09	0.00	64.13
GRAND LAKE 6 SSW	1948-2005	0.00	0.00	0.00	0.00	4.82	7.75	7.81	6.79	5.24	3.10	0.00	0.00	35.51
GREEN MOUNTAIN DAM	1948-2005	0.00	0.00	0.00	0.00	4.96	6.56	6.93	5.90	4.65	2.90	0.00	0.00	31.90
JOHN MARTIN DAM	1941-2005	0.00	0.00	6.40	8.04	9.67	11.30	12.31	10.28	7.82	5.61	2.78	0.00	74.21
LAKE GEORGE 8 SW	1948-2005	0.00	0.00	0.00	0.00	5.15	8.26	7.39	6.02	5.72	0.00	0.00	0.00	32.54
MEREDITH	1963-2005	0.00	0.00	0.00	0.00	7.69	8.26	8.34	6.96	5.25	3.21	0.00	0.00	39.71
MONTROSE 1	1948-1982	1.68	1.49	3.34	5.69	7.49	9.47	9.04	7.39	5.54	3.45	1.61	1.26	57.45
PLATORO	1949-1991	0.00	0.00	0.00	0.00	5.86	8.10	6.57	5.24	5.52	3.33	0.00	0.00	34.62
PUEBLO WSO AP	1954-2005	0.00	0.00	0.00	8.71	9.50	11.51	12.14	10.41	8.17	6.14	0.00	0.00	66.58
PUEBLO CITY RESERVOIR	1948-1971	0.00	5.13	5.86	6.85	8.81	10.09	10.60	8.85	7.43	5.30	2.99	2.71	74.62
PUEBLO RESERVOIR	1975-2005	0.00	0.00	0.00	7.18	9.34	10.87	11.58	9.92	7.90	5.88	0.00	0.00	62.67
PUEBLO 6 SSW	1971-1985	0.00	0.00	4.82	7.47	8.57	10.65	11.30	9.40	7.13	5.53	0.00	0.00	64.87
SAN LUIS LAKES 3W	1948-1955	0.00	0.00	4.50	6.07	8.51	9.88	8.49	7.77	6.57	4.53	0.00	0.00	56.32
SPRINGFIELD 7 WSW	1956-2002	0.00	0.00	0.00	7.85	9.73	11.44	12.69	11.28	8.53	6.29	4.57	0.00	72.38
SUGARLOAF RESERVOIR	1948-2005	0.00	0.00	0.00	0.00	0.00	7.03	6.15	4.97	4.15	2.93	0.00	0.00	25.23
TRINIDAD LAKE	1989-2005	0.00	0.00	0.00	6.75	9.04	10.55	9.88	8.27	7.65	6.17	3.92	2.21	64.44
TWIN LAKES RESERVOIR	1949-2005	0.00	0.00	0.00	0.00	6.93	8.65	7.92	6.79	5.33	3.96	0.00	0.00	39.58
VALLECITO DAM	1948-2005	0.00	0.00	1.91	3.82	5.29	6.22	6.09	5.31	4.39	3.04	1.60	0.00	37.67
WAGON WHEEL GAP 3 N	1948-1972	0.00	0.00	0.00	0.00	6.69	7.90	7.15	5.81	5.30	2.61	0.00	0.00	35.46
WALSH 1 W	1951-2005	0.00	0.00	0.00	0.00	10.78	12.35	12.76	11.63	9.42	6.88	0.00	0.00	63.82
WIGGINS 7 SW	1960-1971	0.00	0.00	0.00	6.82	8.50	8.42	9.97	8.09	5.87	4.22	2.23	0.00	54.12

Source: <http://www.wrcc.dri.edu/htmlfiles/westevap.final.html>

**WILDLIFE AND SENSITIVE AREAS REPORT
OXY WATER TREATMENT AND STORAGE FACILITY
GARFIELD COUNTY, COLORADO**



Cover Photo: View of water treatment and storage facility, looking west.

**Prepared for:
OXY USA WTP, LP (OXY)
760 Horizon Drive, Suite 101
Grand Junction, CO 81505**

**Prepared by:
WestWater Engineering
2516 Foresight Circle #1
Grand Junction, CO 81505**

**In coordination with:
Cordilleran, a division of Olsson Associates**

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1.0 INTRODUCTION

1.1 Project Description

Cordilleran Compliance Services, a division of Olsson Associates, has requested WestWater Engineering (WWE) to provide a Wildlife and Sensitive Areas Report for OXY USA WTP, LP (OXY). OXY is proposing to develop a water treatment and storage facility, which lies approximately 12 miles north of DeBeque, Colorado in Section 29, Township 6 South, Range 97 West (Figure 1). The treatment and storage facility is within Garfield County, Colorado and is located on private land. The facility is approximately 17 acres in size, and is located adjacent to Conn Creek. Most of the facilities associated with the project have already been constructed, and the time of construction required to complete the project will be minimal. Access to the project site is currently available via County Road 204 (Roan Creek Road), County Road 213 (Conn Creek Road), and a private road.

The primary use of the site and surrounding area is rangeland, pasture, wildlife habitat, and natural gas extraction/development. The general project area is currently undergoing rapid natural gas development including drilling of wells, construction of pipelines, compressors, and access roads.

1.2 General Survey Information

In preparation for developing the following report, WWE biologists performed field surveys and assessments of wildlife, wildlife habitats, and habitats for sensitive plant species on the proposed project area. WWE conducted surveys on April 6, 2009. The purpose of the surveys were to determine the wildlife and sensitive plant species that occupy the project area at varying periods during the year, and species that would potentially be impacted as a result of the water treatment and storage facility and operational activities. Factors considered include: 1) soil type and texture; 2) existing land management; 3) absence or presence of wildlife and plant species including raptors, sage-grouse and other sensitive birds species; 4) special designations by Federal and State wildlife agencies; and 5) the existing natural vegetation community. This report provides written documentation that describes survey findings as well as recommended mitigation measures.

2.0 LANDSCAPE SETTING

2.1 Vegetation

Vegetation communities around the water treatment and storage facility are a mixture of widely scattered piñon-juniper, sagebrush dominated shrublands in the valley floor, and mountain shrub on the adjacent steep slopes. Agricultural meadows are present on private lands only, about 0.1 miles south of the project location. Piñon-juniper woodlands are dominated by Utah juniper (*Juniperus osteosperma*) and occasional piñon pine (*Pinus edulis*) and are mixed with Wyoming sagebrush (*Artemisia tridentata wyomingensis*), forbs, and grasses. The water treatment and storage facility boundaries are immediately adjacent to Conn Creek, and therefore, riparian communities are present in the project area. Vegetation along the creek consists of cottonwood

(*Populus spp.*), greasewood (*Sarcobatus vermiculatus*), Rabbitbrush (*Chrysothamnus nauseosus*), willows (*Salix spp.*), alder (*Alnus spp.*), Gambel oak (*Quercus gambelii*), box-elder (*Negundo aceroides*) and basin big sagebrush (*Artemisia tridentata tridentata*). The shrublands within the project area are characterized by basin big sagebrush, greasewood, and green rabbitbrush (*Chrysothamnus viscidiflorus*). Non-native downy brome (*Bromus tectorum*) and annual wheatgrass (*Eremopyrum triticeum*) dominate the understory for this shrubland community. The adjacent mountain shrub vegetation consists primarily of serviceberry (*Amelanchier alnifolia*), Gambel's oak, and Wyoming big sagebrush with an understory of grasses and forbs. Bare ground is also present throughout much of the site due to impacts from development.

The climate for the Piceance Basin is considered semi-arid with a wide range of temperatures and precipitation. The closest weather station is at the Altenbern Ranch on Roan Creek, which has provided reliable records to the National Oceanic and Atmospheric Administration (NOAA) since 1948. The average annual precipitation at the ranch is 16.41 inches, with a record low temperature of minus 38 degrees Fahrenheit and a record high temperature of 104 degrees Fahrenheit (NOAA website: www.noaa.gov). The average annual precipitation at the upper elevations in the project area should equal, and likely exceed, that observed along Roan Creek.

2.2 Soils

Soil types include loams and sandy to gravelly loams that overlay broken shale derived from the Green River Formation. This formation is visible in the sheer canyons of Roan and Parachute Creek and the Roan Cliffs overlooking the towns of Rifle, Parachute, and DeBeque, Colorado. In many areas, soil profiles are shallow, with only 12-24 inches of soil overlying deep, broken shale deposits. Soil types and the vegetation supported vary with elevation and slope aspect. Mapped soil types, as published by the Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture (USDA), were reviewed to determine the soil types and vegetation characteristics of the project site and surrounding property (NRCS 2009).

Two soil types are found in the project area and include the following:

1. Happle very channery sandy loam with 3 to 12 percent slopes.
2. Happle-Rock outcrop association, with 25 to 65 percent slopes.

2.3 Terrain

The terrain varies from flat to moderately steep hillsides with elevations ranging from about 5,900 ft to about 6,200 ft. The water treatment and storage facility lies adjacent to Conn Creek, the section of which is classified as an intermittent stream. No water was flowing in the creek at the time of the survey.

Natural gas exploration and development is resulting in landscape/watershed scale habitat fragmentation. The physical loss of habitat is due primarily to the increase in roads, well pads, pipelines, compressor stations, and other ancillary facilities required to produce and transport natural gas. Additionally these activities contribute to the introduction and/or spread of invasive species. Generally the undisturbed area retains good vegetation cover, including native grasses such as Sandberg bluegrass (*Poa sangbergii*), Indian ricegrass (*Achnatherum hymenoides*), bottlebrush squirreltail (*Elymus elmoides*), galleta (*Haiaria jamesii*), and needle-and-thread grass (*Hesperostipa comata*), introduced and invasive grasses including downy brome, annual

wheatgrass, and crested wheatgrass (*Agropyron cristatum*), as well as forbs and shrubs including sagebrush and greasewood.

3.0 WILDLIFE AND PLANT SURVEYS

3.1 Background Information

Descriptions of critical habitats for federally-listed threatened, endangered, and candidate fish and wildlife species were reviewed in the Federal Register, U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). Wildlife habitat (activities) maps, provided via the internet web by the Colorado Division of Wildlife's (CDOW) "Natural Diversity Information Source" (NDIS), were reviewed and incorporated into this report in reference to mule deer, elk, black bear, mountain lion, and state-listed threatened, endangered and species of "special concern"(CDOW 2008a).

A list of Birds of Conservation Concern (BOCC) and their habitats was reviewed. This list is published by the USFWS through a Memorandum of Understanding with the BLM and the U.S. Forest Service (USFS), which places high conservation priorities for BOCC species (USFWS 2002). Not all of these BOCC species occur regularly in Colorado, some are present only as seasonal migrants. Of those known to breed in Colorado, only a portion are known or suspected to breed within the vicinity of the proposed water treatment and storage facility. Avian literature sources such as the "Birds of Western Colorado Plateau and Mesa Country" (Richter et al. 2004) and the "Colorado Breeding Bird Atlas" (Kingery 1998) were reviewed to determine the likelihood for species occurrence within the project area. Bird identification and taxonomic nomenclature are in accordance with that applied by the Colorado Breeding Bird Atlas Project (Kingery 1998).

The determination of the presence/absence of suitable habitat for Threatened, Endangered, and "Sensitive Species" (TESS) plants was based on previous WVE observations of typical habitat occupied by BLM or USFS sensitive plants, the Colorado Natural Heritage Program (CNHP) Rare Plant Field Guide (Spackman et al. 1997), and locations of species documented in the CNHP statewide database.

3.2 Survey Methods

A preliminary review of the project area, using aerial photography maps, was conducted to familiarize personnel with vegetation types and terrain and as an aid to help determine the likelihood of the presence of threatened, endangered, or sensitive wildlife and plant species. Field data, including general project location, boundaries, and reported features, were verified and/or recorded with the aid of a handheld global positioning system (GPS) receiver utilizing NAD83/WGS84 map datum, with all coordinate locations based on the Universal Transverse Mercator (UTM) coordinate system within Zone 12. WVE biologists conducted pedestrian surveys of the area to identify and locate wildlife species, wildlife sign (tracks, fecal droppings, and vegetation disturbance), vegetation communities, and wildlife habitats. Vegetation types were determined through field identification of plants, aerial photography, and on-the-ground assessments of plant abundance. Identification of plant species was aided by using pertinent published field guides (Whitson et al. 2004, Weber and Wittman 2001, CWMA 2007, Kershaw et al. 1998). Visual searches for raptor and other bird species nests were focused on shale cliffs, scattered juniper trees, and the riparian areas along Conn Creek within a 0.25 mile distance from

the water treatment and storage facility. Nest searches and bird identification were aided with the use of binoculars and song recognition, where needed.

Photographs were taken of the general project location, surrounding vegetation, and terrain (Cover Photo).

4.0 RESULTS OF SURVEY

4.1 TESS Plant Species

Special status species of plants that may be present in the project area, and their habitats, are listed in Tables 1 and 2. There are two categories for TESS plant listing, 1) Federal Threatened, Endangered and Candidate Species (2 species) and 2) BLM Sensitive Species (3 species). Nomenclature and habitat descriptions are based on the CHNP literature (Spackman et al. 1997).

Table 1. Potential Federally-listed Threatened, Endangered, and Candidate plant species

Scientific Name	Common Name	Status*	Habitat Preference
<i>Phacelia scopulina</i> var. <i>submutica</i>	DeBeque phacelia	C	This plant grows only in Garfield and Mesa counties within the Piceance Basin in western Colorado. The plant is restricted to the barren, dark gray and brown, clay soils of the Atwell Gulch and Shire members of the Eocene and Paleocene Wasatch geological formation. Elevation: 4,700 to 6,200 feet
<i>Sclerocactus glaucus</i>	Colorado hookless cactus	T	Endemic to western Colorado; generally found on coarse soils derived from cobble and gravel river and stream terrace deposits, or rocky surfaces on mesa slopes at 4,400 to 6,200 feet in elevation.

* E= Federal Endangered, T= Federal Threatened, C= Federal Candidate

Table 2. Potential BLM or CNHP listed sensitive plant species that may occur in the project area

Scientific Name	Common Name	Habitat Preference
<i>Cirsium perplexans</i>	Rocky Mountain thistle	Barren clay outcrops derived from shales of the Mancos or Wasatch formations; open and disturbed sites in mixed shrubland and piñon-juniper woodland. Elev. 5,000-8,000 feet
<i>Astragalus naturitensis</i>	Naturita milkvetch	Sandstone mesas, ledges, crevices and slopes in pinyon-juniper woodlands. Elev. 5000-7000 feet
<i>Astragalus debequaeus</i>	DeBeque milkvetch	Varicolored, fine textured, seleniferous, saline soils of the Wasatch Formation-Atwell Gulch Member. Barren outcrops of dark clay interspersed with lenses of sandstone. Elev. 5100-6400 feet

4.2 Federal Listed Threatened, Endangered, Candidate Wildlife Species

No federally listed threatened, endangered, or candidate wildlife species are known to occupy the area on or around the water treatment and storage facility, thus, none of these species will be affected as a result of the project. The project site and surrounding area potentially affected by the facility (silt loading) drain into Conn Creek and from there into the section of the Colorado River that is designated critical habitat for the Federally-endangered Colorado pikeminnow and razorback sucker (Maddux et al. 1993).

4.3 State Listed Threatened, Endangered Special Concern Wildlife Species

WWE biologists determined that one state-listed threatened, endangered, or special concern species may occur within or be affected by the project and is listed in Table 3 (CDOW 2008b).

Table 3. Potential State-listed Threatened, Endangered and Special Concern wildlife species

Scientific Name	Common Name	State Status	Habitat Preference
<i>Oncorhynchus clarki pleuriticus</i>	Colorado River cutthroat trout	SC	Perennial mountain streams on the Roan Plateau in drainages of Parachute and Roan Creeks.

* E= State Endangered, T= State Threatened, SC = Species of Concern

The project area is not known to CDOW to be habitat for Colorado River cutthroat trout. There are no fisheries inventories of Conn Creek documented by CDOW or any other agency (Elmblad 2008 pers. comm.).

4.4 Birds of Conservation Concern (BOCC)

4.4.1 Raptors

Several raptor (birds of prey) species nest, reside, forage, or pass through the general area of the water treatment and storage facility. Raptor species that are common to the area include Golden Eagle, Bald Eagle, Red-tailed Hawk, American Kestrel, Cooper's Hawk, Sharp-shinned Hawk, Northern Harrier, Peregrine Falcon, Long-eared Owl, and Great Horned Owl. The riparian corridors and shale cliffs existing in the project area are of sufficient height and density for tree and cliff nesting raptors.

Raptor species that are listed as BOCC within the Piceance Basin, which may occur in the project area, are listed in Table 4. In addition to the BOCC list, eight other species of raptors that could potentially be found nesting in the project area are also listed in Table 4.

Table 4. Raptor species that may be present in the project area

Common Name	Scientific Name	BOCC	Habitat & Breeding Records
Northern Harrier	<i>Circus cyaneus</i>	Y	<ul style="list-style-type: none"> Grassland, shrubland, agricultural areas, and marshes. Nests in areas with abundant cover (e.g., tall reeds, cattails, grasses) in grasslands and marshes. Also known to nest in high-elevation sagebrush.
Cooper's Hawk	<i>Accipiter cooperii</i>	N	<ul style="list-style-type: none"> Cottonwood riparian to spruce/fir forests, including piñon/juniper woodlands. Nests most frequently in pines and aspen.
Sharp-shinned Hawk	<i>Accipiter striatus</i>	N	<ul style="list-style-type: none"> High density young, or even-aged, stands of coniferous forest and deciduous forests of aspen or oak brush with small stands of conifers.
Red-tailed Hawk	<i>Buteo jamaicensis</i>	N	<ul style="list-style-type: none"> Diverse habitats including grasslands, piñon-juniper woodlands and deciduous, coniferous and riparian forests. Nests in mature trees (especially cottonwood, aspen, and pines) and on cliffs and utility poles.
Swainson's Hawk	<i>Buteo swainsoni</i>	Y	<ul style="list-style-type: none"> Typically, arid grassland, desert, agricultural areas, shrublands and riparian forests. Nests in trees in or near open areas.
Golden Eagle	<i>Aquila chrysaetos</i>	Y	<ul style="list-style-type: none"> Grasslands, shrublands, agricultural areas, piñon-juniper woodlands, and ponderosa forests. Prefers nest sites on cliffs and sometimes in trees in rugged areas.
American Kestrel	<i>Falco sparverius</i>	N	<ul style="list-style-type: none"> Coniferous and deciduous forests and open terrain with suitable perches. Nests in cavities in trees, cliffs and buildings.
Peregrine Falcon	<i>Falco peregrinus</i>	Y	<ul style="list-style-type: none"> Piñon-juniper woodlands and coniferous and riparian forest near cliffs. Nests on ledges of high cliffs away from human disturbance.
Prairie Falcon	<i>Falco mexicanus</i>	Y	<ul style="list-style-type: none"> Grasslands, shrublands, and alpine tundra. Nests on cliffs or bluffs in open areas.
Great Horned Owl	<i>Bubo virginianus</i>	N	<ul style="list-style-type: none"> Occupies diverse habitats including riparian, deciduous and coniferous forests with adjacent open terrain for hunting.
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	N	<ul style="list-style-type: none"> Mountain and foothills forest and canyon country. Significant use of piñon-juniper woodland and Douglas-fir.
Long-eared Owl	<i>Asio otus</i>	N	<ul style="list-style-type: none"> Occupies mixed shrublands. Nests and roost in sites in dense cottonwoods, willows, scrub oak, junipers and dense forest of mixed conifers and aspens.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Y	<ul style="list-style-type: none"> Generally nest near larger bodies of water that support fish populations. Nests in large trees and cliffs.

One raptor nest was observed in a cottonwood tree in the adjacent riparian area northeast of the water treatment and storage facility (Figure 1, Table 5, Photo 1). The nest was unoccupied with an unknown activity status and is likely an old accipiter nest.

No known Bald Eagle nest sites are located within the project area. CDOW records (NDIS 2007) indicate Bald Eagle winter range is along the Roan and Conn Creek basins, south of the water treatment and storage facility (Figure 1). Bald Eagles often feed on the carcasses of mule deer, which have died due to winter stress or highway road-kills.

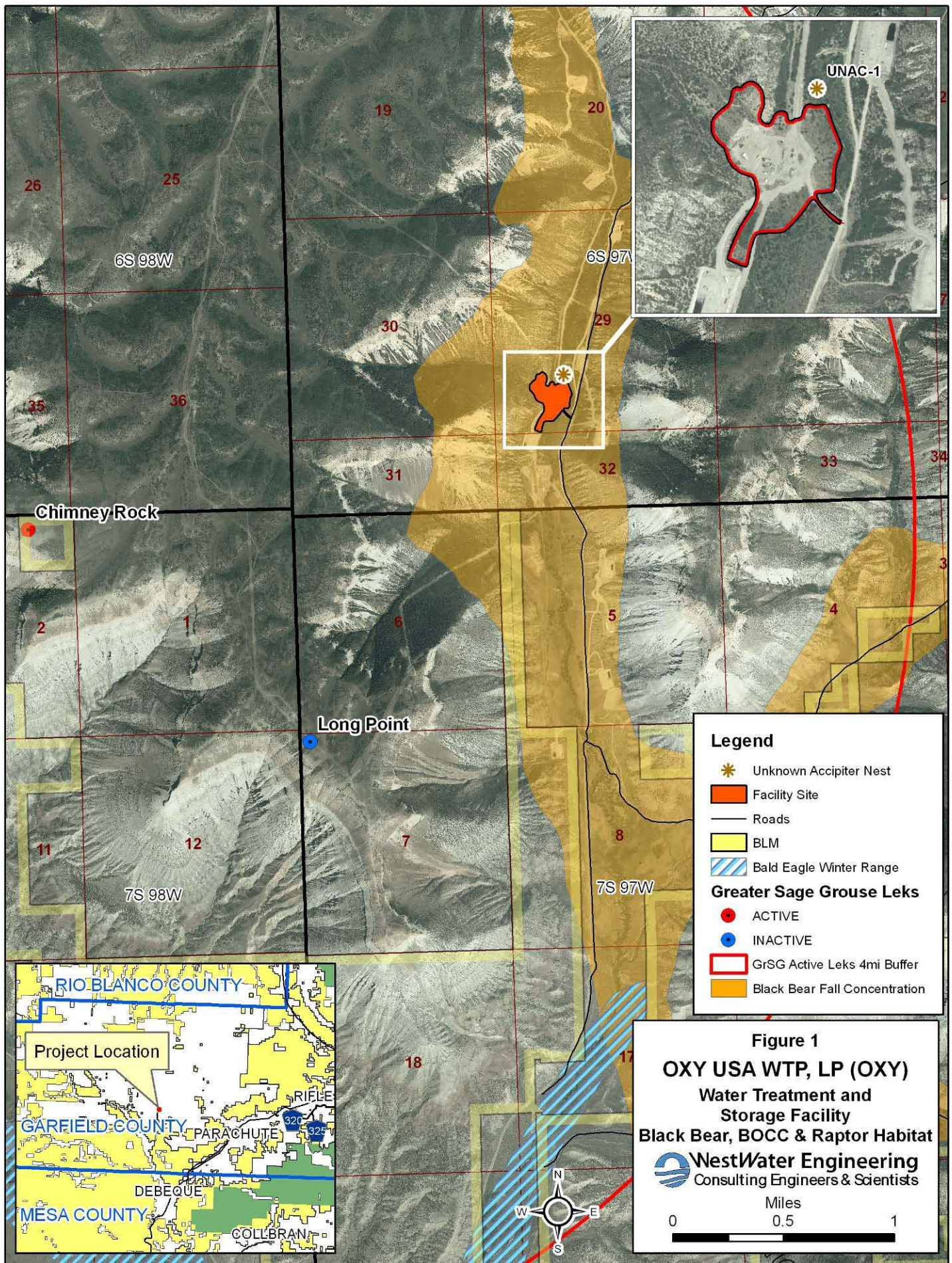
Location information regarding the raptor nest observed during this survey is found in Table 5 and Figure 1.

Table 5. Raptor Nest Sites

Raptor Species	Occupied (Yes/No)	Type Nest	Map Label	Distance to Facility Boundary	NAD83 UTM Zone12		Comments
					Easting	Northing	
Unknown	No	Stick	UNAC-1	~38 m	736758	4374833	Nest in cottonwood, appeared to be in poor condition.



Photo 1. Unoccupied accipiter nest observed in a cottonwood northeast of project area.



4.4.2 Birds of Conservation Concern (BOCC) other than raptors

WWE biologists surveyed the water treatment and storage facility project area for the presence of the sensitive BOCC (Table 6) and their habitat in order to help evaluate the potential impacts of this project. BOCC habitat and nesting records, as described in the Colorado Breeding Bird Atlas (Kingery 1998), Colorado Birds (Andrews and Righter 1992), and Birds of Western Colorado Plateau and Mesa Country (Righter et al. 2004) in the vicinity of the water treatment and storage facility, are summarized in Table 6.

Table 6. BOCC species that may be present in the project area

Common Name	Scientific Name	Habitat & Breeding Records
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	<ul style="list-style-type: none">• Piñon-juniper woodlands. Nests in piñons or junipers.• Confirmed resident in Mesa and Garfield Counties in the vicinity of the water treatment and storage facility.
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>	<ul style="list-style-type: none">• Mature piñon-juniper woodlands. Nests on horizontal branches in piñon or juniper.• Nesting has been confirmed in the area of DeBeque, Colorado.
Sage Sparrow	<i>Amphispiza belli</i>	<ul style="list-style-type: none">• Large contiguous areas of low-elevation big sagebrush or sagebrush/greasewood shrublands. Nests in sagebrush.• Breeding has been confirmed in area of DeBeque, Colorado.
Virginia's Warbler	<i>Vermivora virginiae</i>	<ul style="list-style-type: none">• Dense shrublands and scrub forests of Gambel oak, piñon-juniper, mountain mahogany or ponderosa pine. Nests on the ground among dead leaves or with rock or log overhangs.• Common: Nesting has been confirmed in Rio Blanco and Garfield Counties including on the Roan Plateau.
Lewis's Woodpecker	<i>Melanerpes lewis</i>	<ul style="list-style-type: none">• Riparian habitats, nests in old decadent cottonwoods• Uncommon; individual bird observed by WWE biologist in May, 2005 on Clear Creek.

No BOCC were observed during the survey. Suitable habitats for the species listed in Table 6 were observed in the area of the project.

4.4.3 Greater Sage-Grouse

The Greater Sage-Grouse is recognized by the BLM and CDOW as a species of special concern. Greater Sage-Grouse occupy the sagebrush shrublands on the divide between the Parachute Creek and Roan Creek drainages. They require large, continuous areas of sagebrush habitat on flat gently rolling terrain with vegetation dominated by sagebrush (*Artemisia tridentata* var. *vaseyana*) and, generally, lacking an overstory of mountain shrub or woodland species.

Recent research by the CDOW reveals that approximately 80 percent of the females nest within a 4-mile radius of the lek on which they were bred (Colorado Greater Sage-Grouse Conservation Plan 2008).

The OXY Water Treatment and Storage Facility is located outside the normal habitat for Greater Sage-Grouse, but it falls within the 4-mile radius from an active lek (Chimney Rock) and a historical lek (Long Point).

No sage-grouse sign was observed during the surveys. It is unlikely that sage-grouse will occur on the project site due to the limited amount of sagebrush and the existing disturbance. Active and inactive lek sites can be seen in Figure 1.

4.5 Terrestrial Species

4.5.1 American Elk and Mule Deer

The water treatment and storage facility lies within CDOW, Game Management Unit (GMU) 31. The project area is situated within mule deer and American elk overall range. It is also included in mule deer winter range and elk winter range. The water treatment and storage facility lies within an elk winter concentration area as mapped by CDOW “NDIS” (Figure 2). During the survey, deer droppings and fresh tracks were observed throughout the project area.

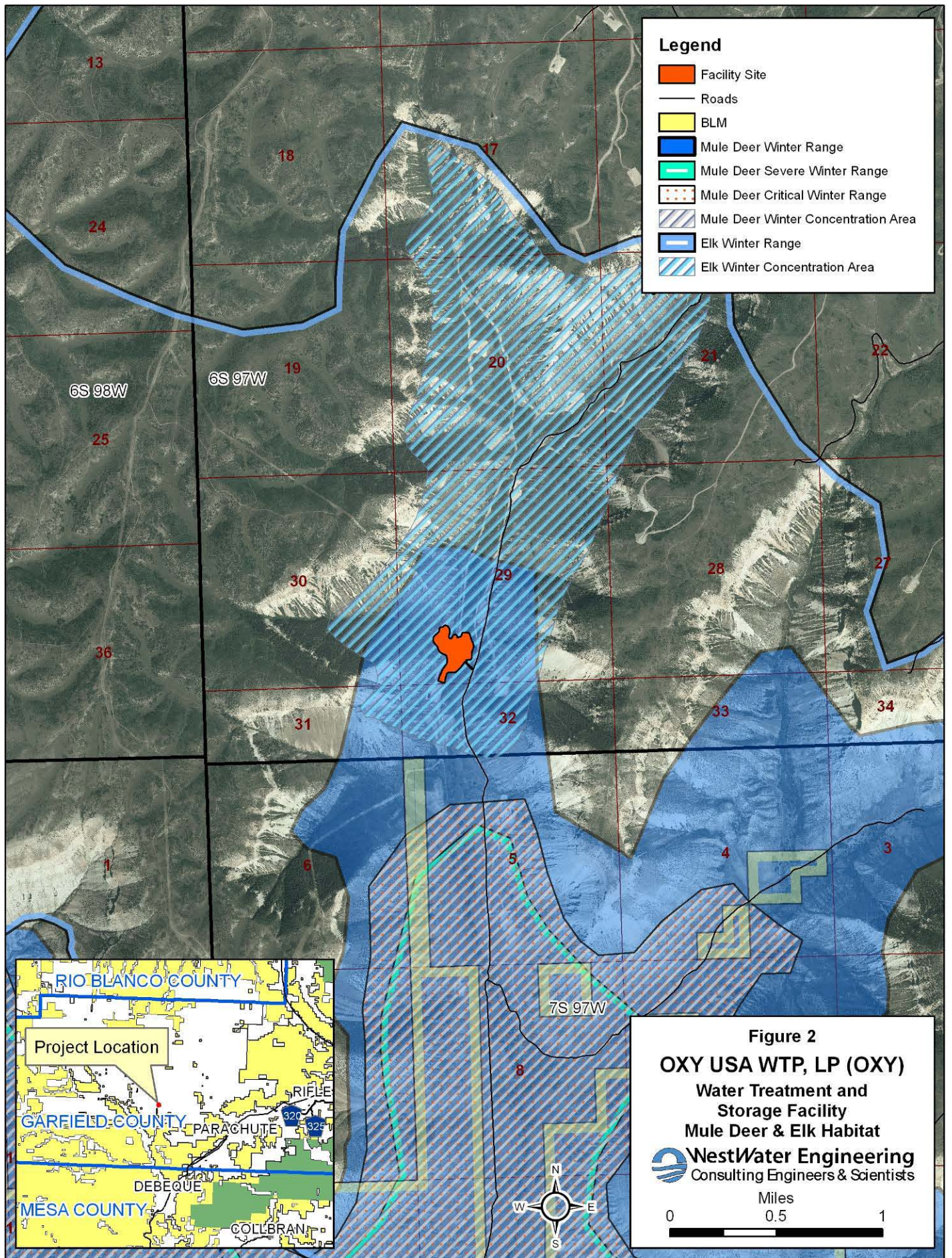
Elk and mule deer utilize the winter range extensively on the Roan Creek drainage, following the snow line to higher elevations in the spring. Mule deer rely on the existing sagebrush and shrubs for their primary food source, while elk rely primarily on available grasses for food. Areas of piñon juniper woodlands and scattered oakbrush and serviceberry copses provide necessary forage and production areas as well as escape, thermal, and loafing cover for deer and elk, particularly during the summer period.

4.5.2 Black Bear and Mountain Lion

CDOW “NDIS” mapping shows the water treatment and storage facility to be within overall range for black bear and mountain lion. It also lies within a black bear fall concentration area (Figure 1), which follows Conn Creek.

Black bear are a common resident mammal on the Roan Plateau. Black bears are omnivorous and the diet depends largely on what kinds of food are seasonally available, although their mainstay is vegetation. In spring, emerging grasses and succulent forbs are favored. In summer and early fall, bears take advantage of a variety of berries and other fruits. In late fall, preferences are for berries and mast (acorns), where available. When the opportunity is present, black bears eat a diversity of insects, including beetle larvae and social insects (ants, wasps, bees, termites, etc.), and they kill a variety of mammals, including rodents, rabbits, and young or unwary ungulates. The Roan Plateau provides important habitat to black bear during the late spring, summer, and fall months with its abundance of berry and mast producing plants including serviceberry, chokecherry, and Gambel oak. Black bear are in hibernation from mid-November through May. The project area is not mapped by CDOW as a potential black bear conflict area.

Mountain lion typically follow migrating deer herds in search of deer as the primary food source. Mountain lion have large territories and are highly mobile as they search for food or new territories. Mountain lion prefer to hunt in rocky terrain near woodland habitats. These habitat conditions occur within the project area. Mountain lion could travel through and hunt in the project area year-round. The project area is not mapped by CDOW as a potential mountain lion conflict area.



4.5.3 Small Mammals

Coyote (*Canis latrans*) tracks were observed in damp soil in the vicinity of the project area, and golden-mantled ground squirrels (*Spermophilus lateralis*) were also observed during the surveys. Other common small mammal species (small game, furbearers, non-game) that may be present on the project site include valley pocket gopher (*Thomomys bottae*), cottontail rabbit (*Sylvilagus spp.*), white-tailed jackrabbit (*Lepus townsendii*), and least chipmunk (*Tamias minimus*).

Species of bats from the genera *Myotis* may be present in the woodlands including two BLM sensitive species, *Myotis yumanensis* and *Myotis thysanodes*.

4.5.4 Other Bird Species

The proposed project lies within overall range for wild turkey (Merriam's - *Meleagris gallopavo merriami*). Wild turkeys are commonly observed in the Roan Creek drainage area.

The project areas' shrublands, woodlands, and understory grasses provide nesting and foraging habitats for various other migratory and non-migratory bird species, depending on the season of the year. Bird species observed during the surveys include American Crow (*Corvus brachyrhynchos*), Common Raven (*Corvus corax*), Northern Flicker (*Colaptes auratus*), Townsend's Solitaire (*Myadestes townsendi*), Mountain Bluebird (*Sialia currucoides*), American Robin (*Turdus migratorius*), Dark-eyed Junco (*Junco hyemalis*), Black-billed Magpie (*Pica pica*), Spotted Towhee (*Pipilo maculatus*), and Song Sparrow (*Melospiza melodia*). Other bird species that may occur on the project site include: Brewer's Sparrow (*Spizella breweri*), Vesper Sparrow (*Pooecetes gramineus*), Tree Swallows (*Tachycineta thalassina*), Cliff Swallows (*Petrochelidon pyrrhonota*), Turkey Vulture (*Cathartes aura*), and Green-tailed Towhee (*Pipilo chlorurus*).

Two cavity nest holes were observed in the cottonwood trees (Photos 2 and 3), and one small nest was observed in a Gambel's oak near the southern end of the project area (Photo 4).



Photo 2. Cavity nest hole #1



Photo 3. Cavity nest hole #2



Photo 4. Small nest observed in a Gambel's oak on southern end of project area.

4.5.5 Reptiles

Plateau striped whiptail (*Cnemidophorus velox*), sagebrush lizard (*Sceloporus graciosus*), short-horned lizard (*Phrynosoma hernandesi*), collared lizard (*Crotaphytus collaris*), Western terrestrial garter snake (*Thamnophis elegans*), Racer (*Coluber constrictor*), bull snake (*Pituophis catenifer*), and western rattlesnake (*Crotalus viridis*) are reptiles potentially occurring in the project area.

4.6 Aquatic Species

4.6.1 Amphibians

Two BLM sensitive species, the Northern Leopard frog (*Rana pipiens*) and the Great Basin spadefoot (*Spea intermontana*), along with the Tiger salamander (*Ambystoma tigrinum*) and Chorus frog (*Pseudacris triseriata*), may occur near the project in suitable ponds and in Conn Creek.

4.6.2 Fish

Conn Creek is the only intermittent drainage within the project area. There are no data available from CDOW or other sources on fish populations for Conn Creek (Elmblad 2008 pers. comm.). In the immediate vicinity of the project location, water was not flowing in Conn Creek during the survey.

5.0 AFFECTS TO WILDLIFE

5.1 Wildlife Impact Assessment

The OXY Water Treatment and Storage Facility will affect site-specific native vegetation and wildlife habitat adjacent to the project site. Due to its relative small size and because the area within and around the water treatment and storage facility is already heavily developed, the project will minimally affect wildlife. The project will contribute to the overall cumulative impacts to the wildlife populations of the Roan Plateau that are experiencing gradual habitat loss, fragmentation, alteration, and displacement through increased development.

5.1.1 Terrestrial Species

5.1.1.1 Elk and Mule Deer

Potential affects include the temporary loss of a small amount of elk and mule deer winter ranges. Human presence and activities during the project may create a direct disturbance for elk and deer populations within and immediately adjacent to the project area, although no hunting is authorized on properties controlled by OXY.

5.1.1.2 Birds

Greater Sage-Grouse: Sage-grouse are highly dependent on sagebrush dominated habitats on the Roan Plateau. The quality and quantity of this habitat type dictates its suitability for sage-grouse. Disturbance to sagebrush shrublands that reduces the availability and suitability of presently occupied habitat would affect this species. However, no suitable sagebrush habitat is located within or near the proposed project. The nearest lek to the water treatment and storage facility is Long Point Lek (historical lek site, approximately 1.25 miles away), while the nearest active lek (Chimney Rock) is located approximately 2.25 from the project site (Figure 1). There is a large, steep canyon wall between both lek sites and the project site.

Passerine Species: The affects to foraging and nesting habitat to a small number of bird species is expected to be minimal. The project will require the removal of vegetation for constructing and operating the facility. Affects to local bird species would be more significant should vegetation clearing occur during the breeding/nesting season.

Raptors: One nest was observed within 0.25 miles of the project site. The activity status of this nest is currently unknown by CDOW definitions, as the nest has been observed for only one season. Raptor nesting within 0.25 miles of the water treatment and storage facility could potentially be indirectly affected by disturbance associated with the water treatment and storage facility, including equipment and human presence. Nest sites that are in direct-line of site of construction activities have the most potential for being adversely affected. Effects of disturbance to nest sites are often mitigated when vegetation or terrain features are present to hide the nest from direct-line of sight.

5.1.1.3 Black Bear and Mountain Lion

Due to the large home range of both black bear and mountain lions, and because of the extensive amount of available habitat for these species, no significant affects from this project for these species are expected.

5.1.1.4 Small Mammals

The amount of available habitat for small mammals, including bats, should not be affected significantly by the water treatment and storage facility.

5.1.1.5 Reptiles

The amount of available habitat for reptiles should not be impacted significantly by the water treatment and storage facility. Disturbance will occur primarily within an existing disturbed site, which is not expected to affect reptile populations.

5.1.2 Aquatic Species

5.1.2.1 Amphibians

Downstream individuals would be most susceptible in the event contaminants were introduced to surface water during construction or operational activities. The amount of available habitat for amphibians should not be affected significantly by the water treatment and storage facility. Disturbance will occur primarily within an existing disturbed site, which is not expected to affect amphibian populations.

5.1.2.2 Endangered Fish

The Colorado pikeminnow and the razorback sucker are both federally-listed fish species that occur in the Colorado River. Potential impacts from the water treatment and storage facility include: water use, sedimentation of tributaries to the Colorado River, and spills of chemicals and fuels from equipment.

It is not likely that endangered fish will be affected by this project, due to the distance from the Colorado River and the project size. Appropriate application of stormwater Best Management Practices (BMPs) and Spill Prevention Counter Control (SPCC) measures will also help reduce any potential impacts to aquatic species.

6.0 AFFECTS TO TESS PLANT SPECIES

No TESS plants or their habitats were found during surveys, and therefore no affects on TESS plants are expected.

7.0 MITIGATION RECOMMENDATIONS

The following recommendations for mitigation are presented for maintenance and improvement of wildlife habitat, quality, and prevention of human-caused impacts to resources.

7.1 Maintenance and Restoration of Habitat

Sagebrush communities in the Piceance Basin have declined over the years and continue to do so as a result of development and loss of habitat. Noxious weeds and invasive plant species have now invaded many habitats due to construction and ground clearing of native vegetation.

Woodlands, sagebrush and native grasses are key food sources for elk and mule and provide nesting and foraging habitat for a variety of migratory birds and small mammals. Reclamation plans should include efforts to restore these vegetation communities, particularly the sagebrush community for sage-obligate species.

Reclamation recommendations include the following:

1. Seeding of native Wyoming and big basin sagebrush should be added to the re-vegetation plan. Local, ecologically adapted sagebrush seed from the existing sagebrush vegetation near the project area should be used in reclamation.
2. Ongoing control of noxious and invasive weeds is recommended as an additional method to maintain native vegetation communities and favorable wildlife habitats. An

“Integrated Vegetation and Weed Management Plan” is provided for this project in a separate report.

3. Mitigation for wetland impacts will be provided in accordance with Army Corp of Engineers standards.

7.2 Planning for Sensitive Time Periods and Areas

7.2.1 Mule Deer and Elk

Disturbance associated with construction equipment and personnel may cause elk and mule deer to select habitats in more secluded areas away from the water treatment and storage facility. Any construction and/or operational activities during the winter months will impact deer and elk winter range as mapped by the CDOW “NDIS”. According to the Colorado Oil and Gas Conservation Commission’s amended rules, effective April 1, 2009, elk winter range is excluded from the rules as sensitive wildlife habitat. Deer critical winter range and deer severe winter range are included in the new 2009 rules, neither of which are located within the project area (COGCC 2009).

7.2.2 Migratory Birds

In order to comply with the Migratory Bird Treaty Act by showing a good faith effort to reduce potential impacts on nesting birds, brush/tree clearing should take place outside of the nesting seasons. Nesting season is generally considered between May 15 and July 31 in this area for most species. June 1 to July 15 is the peak period when most incubation and brood rearing takes place. If brush/tree clearing can occur prior to May 1, most affected birds will relocate to alternate nesting sites. After mid-to-late July, most fledging has occurred and brush/tree clearing impacts would be minimized.

Pinyon Jays are an exception to typical nesting periods in this area and are known as an early nester. Records show nests with eggs as early as March 23. Often young birds have fledged by May 15. Because Pinyon Jay habitat makes up a lesser amount of the project site, the pre-May 1 vegetation clearing recommendation is acceptable and adequate to avoid destruction of active migratory bird nests.

7.2.3 Greater Sage-Grouse

In order to reduce the likelihood that sage-grouse populations decline near the project area, effective natural gas pre-development planning and post-development practices offer the best prospect for mitigating adverse affects to sage-grouse populations. Planning development with projects engineered to avoid, minimize, and mitigate affects of natural gas development are approaches that result in the most favorable mitigation outcomes.

No affects to sage-grouse are expected to occur as a result of the facility construction, operation, or maintenance. No specific planning is recommended in regards for Greater Sage-grouse.

7.2.4 Raptors

Activities associated with the water treatment and storage facility have the potential to impact raptor populations. In order to reduce the potential affects to nesting raptors, it will be important that the project proponent schedule construction activities such that they do not interfere with breeding, nesting, and brood rearing activities. CDOW's (Craig 2002 and Klute 2008) recommended raptor nest site avoidance standards for the species observed in this survey are summarized below (Table 7). If the project cannot be completed prior to, or after, the next nesting season, known nest sites should be re-inventoried by qualified biologists. If any birds are found behaving in a manner consistent with nesting, every effort should be made to apply the timing limitation and buffer distance stipulations.

Table 7. Timing and buffer recommendations for active raptor nests

Species	Buffer Zone	Seasonal Restriction
Red-tailed Hawk	0.33 mile	15 February - 15 July
Swainson's Hawk	0.25 mile	1 April - 15 July
Sharp-shinned Hawk	0.25 mile	1 April - 15 August
Cooper's Hawk	0.25 mile	1 April - 15 August
American Kestrel	*	*
Peregrine Falcon	0.5 mile	15 March - 31 July
Prairie Falcon	0.5 mile	15 March - 15 July
Golden Eagle	0.25 mile + alt. nests	15 December - 15 July
Bald Eagle	0.50 mile	15 October - 30 July
Northern Harrier	0.25 mile	1 April - 15 August
Long-eared Owl	0.25 mile	1 March - 15 July
Northern Saw-whet Owl	0.25 mile	1 March - 15 July
Great Horned Owl	*	*

* Great Horned Owls and Kestrels are relatively tolerant of human activity. Keep activity to a minimum during breeding season.

7.3 Other Mitigation Practices

7.3.1 Erosion

Efforts to control soil erosion within the project area should be implemented. Disturbed soils within the project area are susceptible to erosion and downstream water quality could be negatively affected by increased soil erosion. In addition to stormwater management around the project site, other current factors (noxious weeds, livestock grazing, other natural gas development) affecting soil erosion should be managed and remedial measures implemented. Prior to any construction which involves potential stream crossings, appropriate consultation with the U.S. Army Corps of Engineers (ACOE) is recommended.

To protect the integrity of the stream ecosystems and the associated riparian habitat within the project area, precautions should be taken when crossing or intersecting the drainages identified. Implementation of a storm water management plan and standard best management practices, including adequate barriers and filtration methods, should be used to prevent and reduce soil from eroding into streams and riparian areas. This may include the installation of check dams along small ephemeral drainages and vegetation restoration.

7.3.2 Black Bears

Black bears will likely move through the general project area and could be attracted to human-related food sources (garbage, pet foods and barbeque grills). In order to prevent human injury and/or the un-wanted removal, injury, or destruction of bears, it is recommended that food and garbage storage and removal be done in a timely and secure manner so as to not habituate bears to the human activities of the project.

8.0 REFERENCES

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Spackman, S., B. Jennings, J. Coles, C. Dawson, M. Minton, A. Kratz, and C. Spurrier. 1997. Colorado Rare Plant Field Guide. Prepared for the U.S. Bureau of Land Management, the U.S. Forest Service and the U.S. Fish and Wildlife Service by the Colorado Natural Heritage Program.

USFWS. 2002. Birds of Conservation Concern 2002. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia.

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Daniel Padilla
Occidental Oil & Gas Corporation (OXY)

RE: Potential Wetlands Impact Assessment

Occidental Oil & Gas Corporation (OXY) has contracted Cordilleran, a division of Olsson associates to conduct an assessment for potential wetlands impact on construction of a water treatment facility. OXY is proposing to construct a water treatment facility, storage, and lay down yard located approximately 12 miles north of DeBeque, Colorado in Section 29, Township 6 South, Range 97 West. The proposed project will encompass approximately 17 acres in size and lies directly west of Conn Creek in Garfield County, Colorado. A wetlands impact assessment was performed by following the guidelines set forth by the regional supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. On April 7, 2009 a field survey was conducted to determine the vegetation, soil, and hydrology of the project area. In order for an area to be considered a wetland, the site must include hydrologic features, hydrophytic vegetation must be dominant, and the soil must be hydric.

The hydrology of the project site was evaluated based upon consultation of National Wetlands Inventory (NWI) maps and physical observation for the presence of typical wetland hydrological features. The NWI maps for the area indicate that there are no wetlands present within proximity of the project site. There also was no visual observation of inundation or soil saturation to the surface within the project boundaries. Several soil borings were made along the riparian corridor to determine if there is soil saturation within the top 12 inches. There was no saturation within the top 12" of the soil surface and given the potential capillary fringe for sandy loam to be 3.9-7.9", it is not likely that soil saturation to the surface occurs for more than 5% of the growing season. There were no other primary or secondary hydrological indicators observed during the survey.

There are two vegetative communities located within the boundaries of the project site. The majority of the site is pinon-juniper woodlands, shrublands, and grasslands primarily dominated by Utah Juniper (*Juniperus osteosperma*), Pinon Pine (*Pinus edulis*), sagebrush (*Artemisia tridentata*), Rabbitbrush (*Chrysothamnus nauseosus*), Western Wheatgrass (*Pascopyrum smithii*), and Annual Wheatgrass (*Eremopyrum triticeum*). The other vegetative community is adjacent to Conn Creek along the riparian corridor and is dominated by Cottonwood (*Populus balsamifera*), Gambel Oak (*Quercus gabelii*), sagebrush, greasewood (*Sarcobatus vermiculatus*), Rabbitbrush, Dogwood (*Cornus stolonifera*), Redwood Plantain (*Plantago eriopoda*), and Annual Wheatgrass. Both vegetative communities also contain large areas bare ground due to disturbance caused by previous construction activities. Hydrophytic vegetation is not dominant in either of the vegetative communities, except within the banks of Conn Creek, which is out of the project boundary.

The Hydric Soils list for Garfield County, Colorado was consulted for the presence of hydric soils with the project area. None of the soil map units on the project site are identified as being hydric soils or containing inclusions of hydric soils. The most current mapping from the Natural Resources Conservation Service (NRCS) Web Soil Survey shows the project site contains the following soil series:

1. Happle very channery sandy loam with 3 to 12 percent slopes.

2. Happle-Rock outcrop association, 25 to 65 percent slopes.

Additionally, soil samples indicated very little organic material within the top 12" of the surface indicative of well-drained non-hydric soil. There were no other indicators for hydric soils observed during the survey.

Based on a survey and analysis of the proposed water treatment facility, storage, and lay down yard, Cordilleran did not locate any area within the project boundary that met all of the criteria to be considered a wetland. There is a presence of hydrophytic vegetation, but there were no visual indications of hydrology or presence of hydric soils. Therefore, Cordilleran has determined that the construction of the proposed project will not have any impacts to wetlands, or adversely affect water quality in any nearby waterways if appropriate best management practices are employed.

Sincerely,
Cordilleran, a division of Olsson Associates

A handwritten signature in black ink, appearing to read "Stuart Hall". The signature is fluid and cursive, with the first name "Stuart" and last name "Hall" clearly distinguishable.

Stuart Hall
Associate Scientist



02062982



State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax: (303) 894-2109

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MAR 13 2009

COGCC**INJECTION WELL PERMIT APPLICATION**

Submit a completed Form 33 with or after approval obtained on Form 31 (Underground Injection Permit Application) or you must have a previously approved Injection Well Permit.

1. Operator may not commence injection into this well until this form is approved.
2. Each individual injection well must be approved by this form.

Well Name and Number: Cascade Creek #629-1 API No: 05-045-06857
 UIC Facility No: 159,281 (as assigned on an approved Form 31)
 Project Name: 629-1 Injection Well Operator Name: OXY USA WTP LP
 Field Name and Number: Grand Valley 31290 County: Garfield
 QtrQtr: SWSW Sec: 29 Twp: 6S Range: 97W Meridian: 6th

Complete the Attachment Checklist

	Oper	OGCC
Current Wellbore Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Proposed Wellbore Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CURRENT WELLBORE INFORMATION

	SIZE	DEPTH	NO. SACKS	CEMENT TOP	Cement Top Determined By:		
					CBL	CIRCULATED	CALCULATED
Surface Casing	9.625"	430'	140	Surface	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Intermediate Casing (if any)					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Production Casing	5.5"	7065'	2175	990'	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Plug Back Total Depth: 2680 Tubing Depth: N/A Packer Depth: N/A
 Wasatch Formation Gross Perforation Interval: 2,078' to 2,170'
 Fort Union Formation Gross Perforation Interval: 2,272' to 2,611'
 Formation Open Hole Interval (if any): _____ to _____

List below all Plugs, Bridge Plugs, Stage Cementing or Squeeze Work performed on this wellbore: (if more space needed, continue on reverse side of this form.)

1. CIBP at 5,850', 4,850', 2,680', and 2,250'

2.

3.

4.

Describe below any changes to the wellbore which will be made upon conversion. (This includes but not limited to changes of tubing and packer setting depths, any additional squeeze work for aquifer protection or casing leaks, setting of bridge plugs to isolate non-injection formations.)

1. Drill out plug at 2,250'

2. Install tubing and packer at 2,000'

3.

4.

Comments:

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Chris ClarkSigned: _____ Title: Reg. Coord. Date: 3-12-09OGCC Approved: [Signature] Title: ENGINEERING MANAGER Date: 5/5/09MAX. SURFACE INJECTION PRESSURE: 800 PSI If Disposal Well, MAX. INJECTION VOL. LIMIT: 2,000,000 Bbls

CONDITIONS OF APPROVAL, IF ANY:

OXY

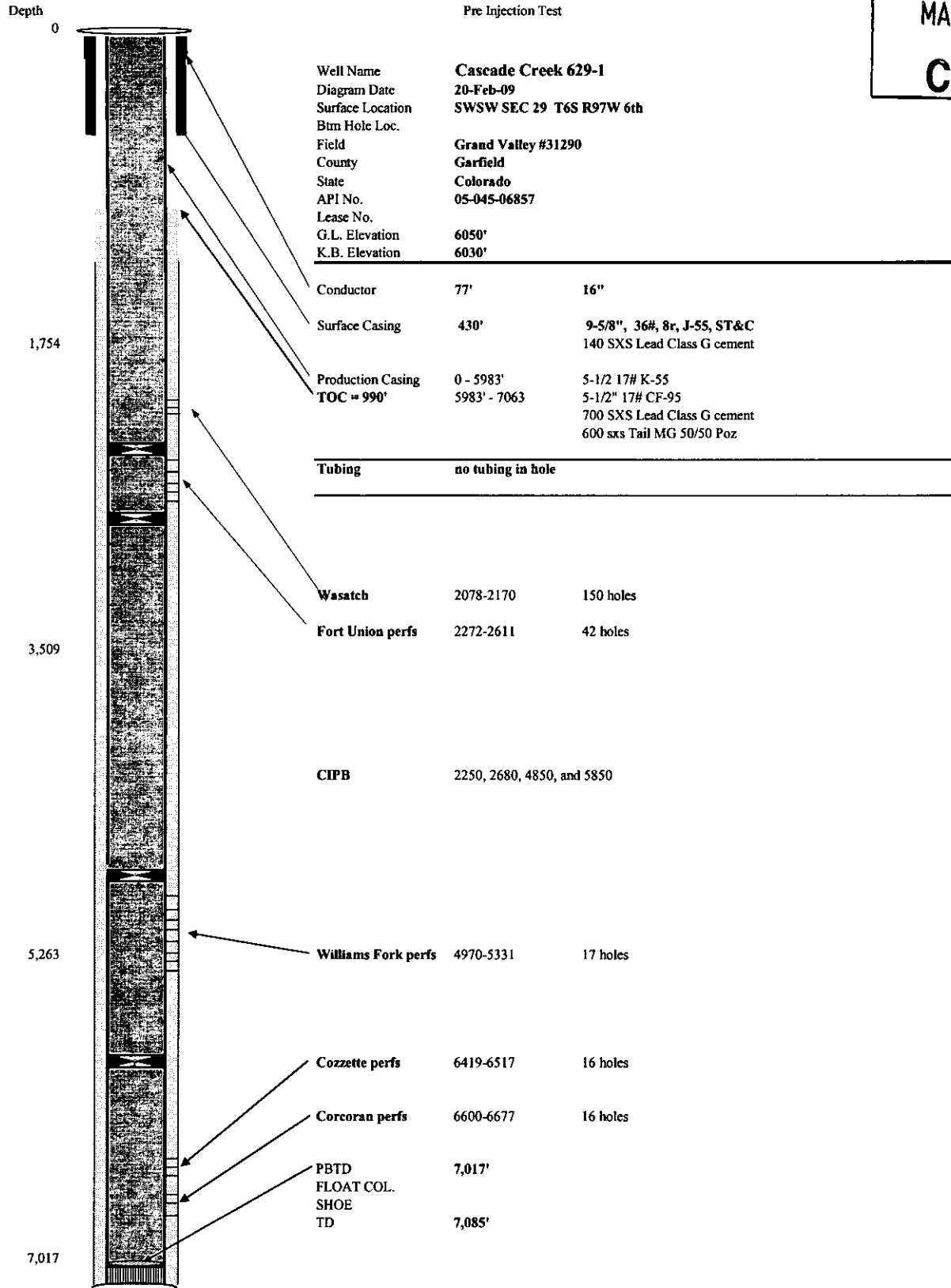
Well Bore Schematic

Pre Injection Test

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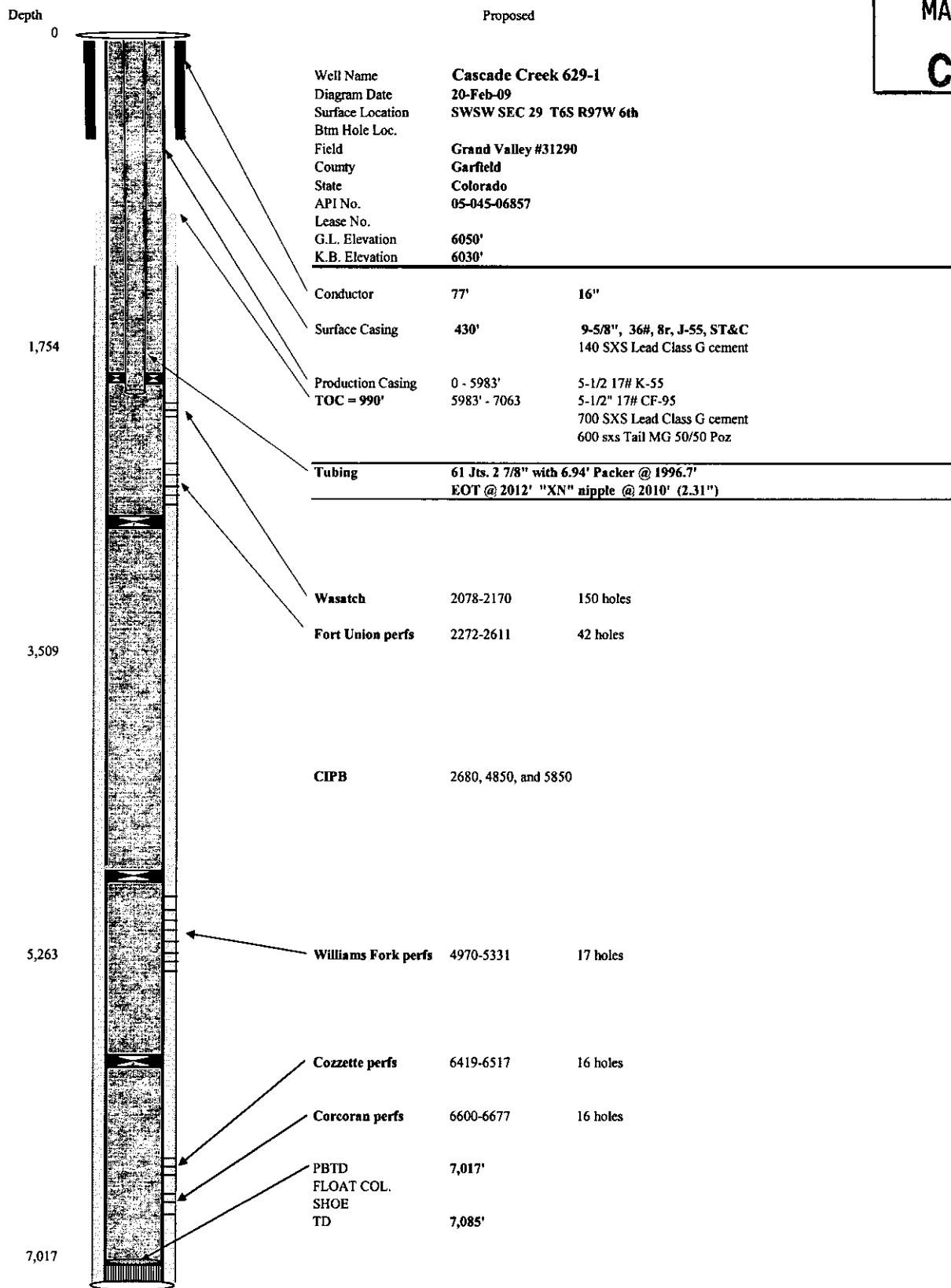
Well Bore Schematic

Proposed

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MAR 13 2009

COGCC





State of Colorado
Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

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UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

1. Submit original and one copy of this form.
2. If data on this form is estimated, indicate as such.
3. Attachments – see checklist and explanation of attachments.
4. Aquifer exemption is required for all injection formations with water quality <10,000 TDS (Rule 322B).
Immediately contact the Commission for further requirements if the total dissolved solids (TDS) as determined by water analysis for the injection zone is less than 10,000 ppm.
5. Attach a copy of the certified receipt to each notice to surface and mineral owner(s) or submit a sample copy of the notice and an affidavit of mailing or delivery with names and addresses of those notified. Each person notified shall be specified as either a surface or mineral owner as defined by C.R.S. 34-60-103(7).

**Complete the
Attachment Checklist**

Oper OGCC

Form 31 Original & 1 Copy	✓
Analysis to Injection Zone Water	✓
Analysis of Injection Water	✓
Proposed Injection Program	✓
Resistivity or Induction Log	✓
Cement Bond Log	✓
Surface or Salt Water Displ Agrmt	✓
Notice to Surface/Mineral Owners	✓
Remedial Correction Plan for Wells	✓
Map Oil/Water Wells w/in 1/4 Mile	✓
List Oil/Gas Wells w/in 1/2 Mile	✓
Map Surface Owners w/in 1/4 Mile	✓
List Surface Owners w/in 1/4 Mile	✓
Map Mineral Owners w/in 1/4 Mile	✓
List Mineral Owners w/in 1/4 Mile	✓
Surface Facility Diagram	✓
Wellbore Diagram	✓
If Commercial Facility, Description of Ops & Area Served	✓
Unit Area Plat	✓

Project Name: CC 629-1 Injection Well Project Location: SWSW, Sec 29, T6S, R97W, 6th PM

Project Type: ☐ Enhanced Recovery ☒ Disposal ☐ Simultaneous Disposal

Single or Multiple Well Facility? ☒ Single ☐ Multiple

IF UNIT OPERATIONS, ATTACH PLAT SHOWING UNIT AREA

County: Garfield Field Name and Number: Grand Valley 31290

OGCC Operator Number: 66571

Name of Operator: OXY USA WTP LP

Address: 760 Horizon Drive, Suite 101

City: Grand Junction State: CO Zip: 81506

Contact Name and Telephone:

CHRIS CLARK

No: 970-263-3628

Fax:

Injection Fluid Type: ☒ Produced Water ☐ Natural Gas ☐ CO₂ ☐ Drilling Fluids

☐ Exempt Gas Plant Waste ☐ Used Workover Fluids ☐ Other Fluids (describe):

Commercial Facility? ☐ Yes ☒ No

If Yes, describe area of operation and types of fluids to be injected at this facility:

PROPOSED INJECTION FORMATIONS

FORMATION A (Name): Wasatch

Porosity: 16%

Formation TDS: 26249 Frac Gradient: .82

psi/ft Permeability:

Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

FORMATION B (Name): Fort Union

Porosity: 14%

Formation TDS: 35114 Frac Gradient:

psi/ft Permeability:

Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☒ None

Anticipated Project Operating Conditions

Under normal operating conditions, estimated fluid injection rates and pressures:

FOR WATER: A minimum of 0 bbls/day @ 0 psi to a maximum of 2000 bbls/day @ 810 psi.

FOR GAS: A minimum of _____ mcf/day @ _____ psi to a maximum of _____ bbls/day @ _____ psi.

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Chris Clark

Signed:

Title: Reg. Coor

Date: 3-12-09

OGCC Approved: DE DILLON

Title: ENGINEERING MANAGER

Date: 6/5/09

Order No:

UIC FACILITY NO: 159,281

CONDITIONS OF APPROVAL, IF ANY:

*PLEASE PERFORM A STEP RATE TEST AFTER COMMENCING INJECTION TO VERIFY
.82 PSI/FT FRAC GRADIENT.*

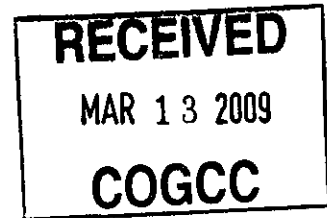


OXY USA WTP LP
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

March 12, 2009

Mr. David Dillon
Colorado Oil and Gas Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203



Re: Submittal of SWD Injection Well Application, OXY USA WTP LP, Cascade Creek 629-1

Dear Mr. Dillon:

Please find the attached forms 31, 33, 25, and 26 to make application for the conversion of the existing Cascade Creek 629-1 well bore into a SWD injection well for the Cascade Creek area. The well bore can be referenced to API # 05-045-0687 and can be found in the SWSW of section 29, T6S, R97W in Garfield County.

The only effected mineral and property owners within the specified area is Chevron USA, Inc. A copy of the notification letter and the certified mail documentation can be found in the attached packet.

In addition to the attached forms we are in the process of running the appropriate MIT testing on the well. Once we have compiled this task the information will be forwarded on to the COGCC along with the appropriate form 21.

If you have any questions or require any additional information about this application, the well bore or our proposed process please feel free to contact either Jamie Adkins at 970-263-3623 or myself at 970-263-3628.

Sincerely,
OXY USA WTP LP


Chris Clark
Regulatory Coordinator

Enclosures: COGCC Form 31, COGCC Form 33, COGCC Form 26, and COGCC Form 25,
Land Owner Notification Letter

Delivery via Fed EX: 796421555450

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MAR 13 2009

COGCC

OXY **Well Bore Schematic** Pre Injection Test ✓

Depth
0

Well Name **Cascade Creek 629-1**
 Diagram Date **20-Feb-09**
 Surface Location **SWSW SEC 29 T6S R97W 6th**
 Btm Hole Loc.
 Field **Grand Valley #31290**
 County **Garfield**
 State **Colorado**
 API No. **05-045-06857**
 Lease No.
 G.L. Elevation **6050'**
 K.B. Elevation **6030'**

Conductor	77'	16"
Surface Casing	430'	9-5/8", 36#, 8r, J-55, ST&C 140 SXS Lead Class G cement
Production Casing	0 - 5983'	5-1/2" 17# K-55
TOC = 990'	5983' - 7063	5-1/2" 17# CF-95 700 SXS Lead Class G cement 600 sxs Tail MG 50/50 Poz

Tubing **no tubing in hole**

Wasatch	2078-2170	150 holes
Fort Union perms	2272-2611	42 holes

CIPB 2250, 2680, 4850, and 5850

Williams Fork perms 4970-5331 17 holes

Cozzette perms 6419-6517 16 holes

Corcoran perms 6600-6677 16 holes

PBTD 7,017'
 FLOAT COL.
 SHOE
 TD 7,085'

1,754

3,509

5,263

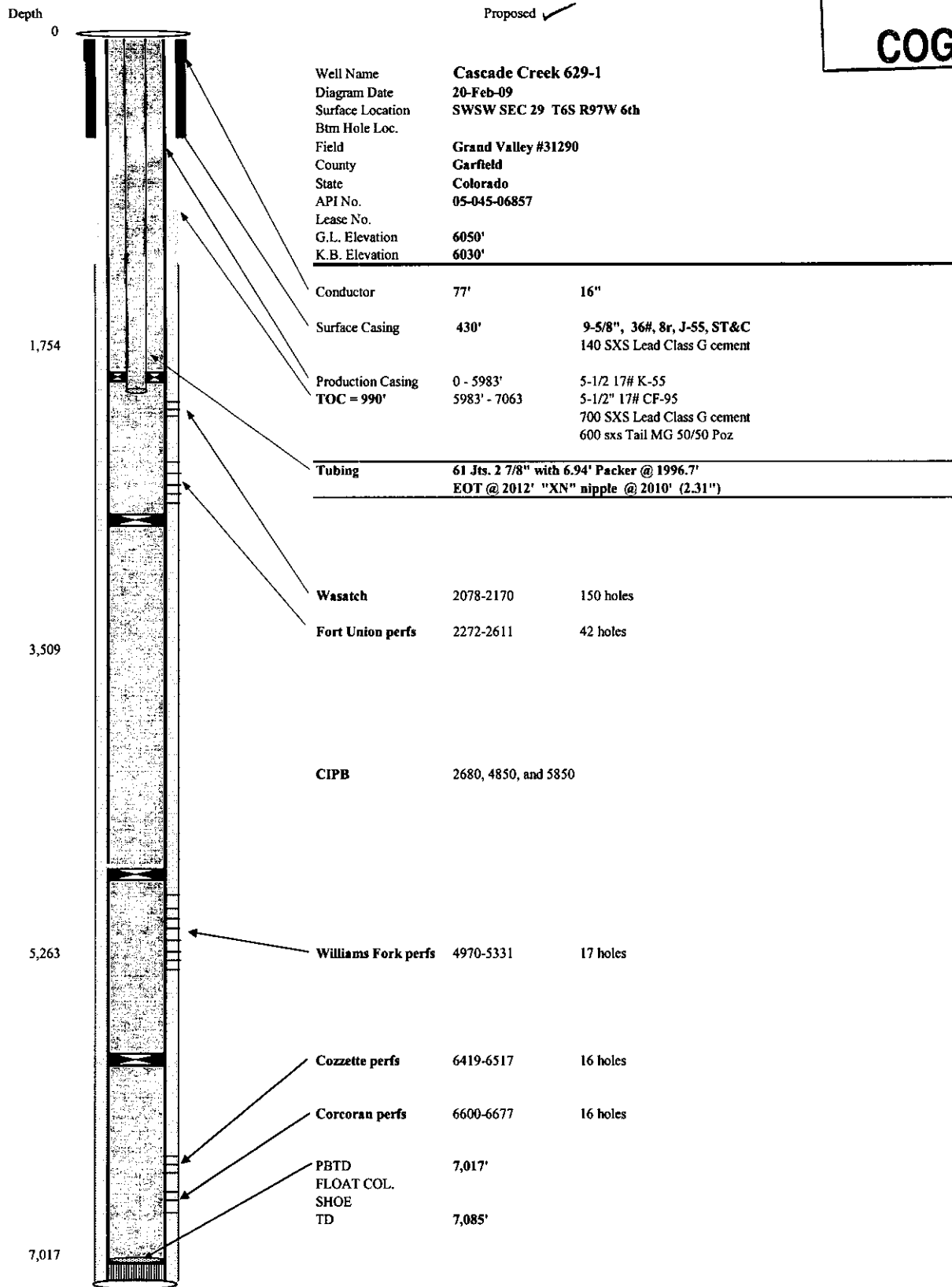
7,017

OXY

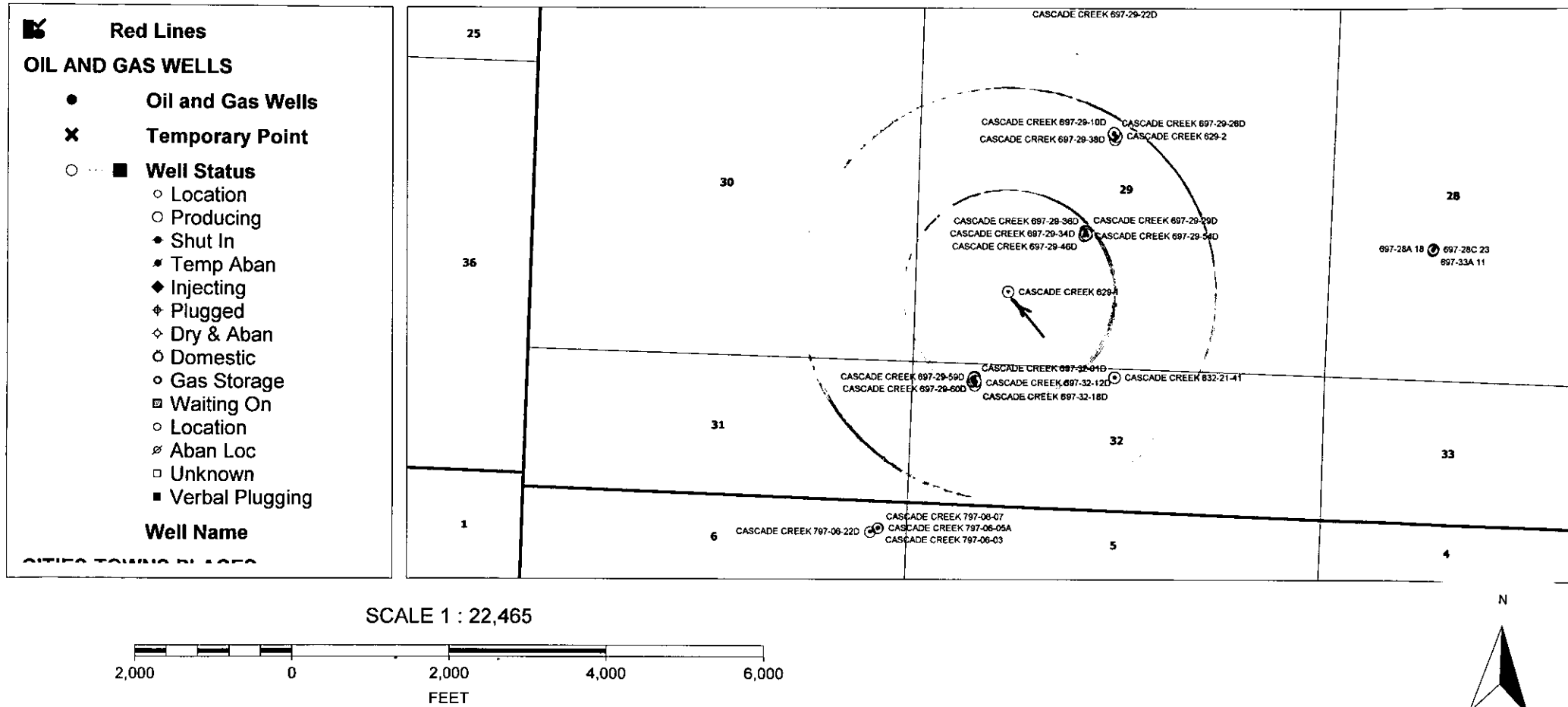
Well Bore Schematic

Proposed ☒

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 MAR 13 2009
COGCC



COGCC GIS Online



OXY USA WTP LP	6S -97W (6)	00	WMFK	PR
Facilities Selected				
FACILITY DESCRIPTION	LOCATION	PIT INFORMATION		
		Type	Unlined	Status

**Colorado
Oil & Gas Conservation Commission**

COGCC Results
Selected Items Report
1/4 MILE RADIUS

Oil and Gas Wells Selected		
Filter Results by Formation Include <input type="checkbox"/> CMEO <input checked="" type="checkbox"/> COZZ <input checked="" type="checkbox"/> CRCRN <input type="checkbox"/> Filter		
WELL DESCRIPTION	LOCATION	WELL INFORMATION
05-045-06857, CASCADE CREEK 629-1 OXY USA WTP LP	SWSW 29 6S -97W (6)	Sidetrack TD Formation Status 00 7085 COZZ AB 00 7085 CRCRN AB 00 7085 FTUN PR 00 7085 MVRD AB 00 7085 WSTC PR
05-045-11809, CASCADE CREEK 697-29-54D OXY USA WTP LP	NESW 29 6S -97W (6)	Sidetrack TD Formation Status 00 6783 WMFK PR <i>TOC 1780'</i>
05-045-11810, CASCADE CREEK 697-29-34D OXY USA WTP LP	NESW 29 6S -97W (6)	Sidetrack TD Formation Status 00 6828 WFCM PR <i>TOC 1340'</i>
05-045-11811, CASCADE CREEK 697-29-29D OXY USA WTP LP	NESW 29 6S -97W (6)	Sidetrack TD Formation Status 00 6800 WMFK PR <i>TOC 970'</i>
05-045-11812, CASCADE CREEK 697-29-46D OXY USA WTP LP	NESW 29 6S -97W (6)	Sidetrack TD Formation Status 00 6850 CMEO PR <i>TOC 1440'</i>
05-045-11813, CASCADE CREEK 697-29-45D OXY USA WTP LP	NESW 29 6S -97W (6)	Sidetrack TD Formation Status 00 6850 CMEO PR <i>AL</i>
05-045-11926, CASCADE CREEK 697-29-36D OXY USA WTP LP	NESW 29 6S -97W (6)	Sidetrack TD Formation Status 00 6560 WMFK PR <i>TOC 1280'</i>
05-045-13433, CASCADE CREEK 629-23-42 OXY USA WTP LP	NESW 29 6S -97W (6)	Sidetrack TD Formation Status 00 6316 WFCM PR <i>WAS AT SURF & FELL BACK TOC 3374'</i>
05-045-13497, CASCADE CREEK 632-13-22 OXY USA WTP LP	LOT 4 32 6S -97W (6)	Sidetrack TD Formation Status 00 6100 WFCM PR <i>TOC 1900'</i>
05-045-13290, CASCADE CREEK 697-32-10D OXY USA WTP LP	LOT 4 32 6S -97W (6)	Sidetrack TD Formation Status 00 6419 WMFK PR <i>TOC 230'</i>
05-045-13291, CASCADE CREEK 697-32-01D OXY USA WTP LP	LOT 4 32 6S -97W (6)	Sidetrack TD Formation Status 00 6382 WFCM PR <i>TOC 830'</i>
05-045-13292, CASCADE CREEK 697-32-03D OXY USA WTP LP	LOT 4 32 6S -97W (6)	Sidetrack TD Formation Status 00 6511 WFCM PR <i>TOC 570'</i>
05-045-11766, CASCADE CREEK 697-32-12D OXY USA WTP LP	LOT 4 32 6S -97W (6)	Sidetrack TD Formation Status 00 6691 WMFK PR <i>TOC 1760'</i>
05-045-11767, CASCADE CREEK 697-29-59D OXY USA WTP LP	LOT 4 32 6S -97W (6)	Sidetrack TD Formation Status 00 6595 WMFK PR <i>TOC 270'</i>
05-045-11768, CASCADE CREEK 697-29-60D OXY USA WTP LP	LOT 4 32 6S -97W (6)	Sidetrack TD Formation Status 00 6685 WFCM PR <i>TOC SURF</i>
05-045-11769, CASCADE CREEK 697-32-09D OXY USA WTP LP	LOT 4 32 6S -97W (6)	Sidetrack TD Formation Status 00 6369 WMFK PR <i>TOC 1270'</i>
05-045-11770, CASCADE CREEK 697-32-18D	LOT 4 32	Sidetrack TD Formation Status 00 6369 WMFK PR <i>TOC UNKNOWN 2280'</i>

VERTICLE HOLE
DIRECTION 65' NW

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MAR 13 2009

COGCC

OXY USA WTP LP

Analysis of Injection Zone Water

Attached are two water sample from the OXY Cascade Creek field. The CC 629-1 report is a water analysis of the Fort Union formation. The CC 697-16-18D is a water analysis report of a wasatch producer OXY currently has on the Cascade Creek lease.

HALLIBURTON

Halliburton Energy Services
The Rockies NWA Regional Laboratory
Grand Junction, CO 970) 523-3692

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Water Analysis Report

Contact Information

Company	Oxy	Date Received	February 2, 2009
Reported To	Richard Hartley	Date Tested	February 2, 2009
Reported By	Ann Ekx	Tested By	Ann Ekx

Sample Physical Characteristics

Well Name	CC 697-16-18D	Temperature	71 °F
Location	Tank	pH	7.2
Specific Gravity	1.010	Color	Yellow
Corrected SG	1.012 at 60°F	Turbidity	Moderate
TDS (calculated)	26249 ppm	Resistivity	0.47 Ω·m

Sample Chemical Characteristics

Anions	Chloride	15400 mg/L	Cations	Total Iron	51.6 mg/L
	Sulfate	0 mg/L		Ferrous Iron	17.4 mg/L
	Bicarbonate	860 mg/L		Potassium	0 mg/L
	Carbonate	0 mg/L		Calcium	470 mg/L
	Hydroxide	0 mg/L		Magnesium	0 mg/L
				Sodium (calculated)	9713 mg/L

General Comments

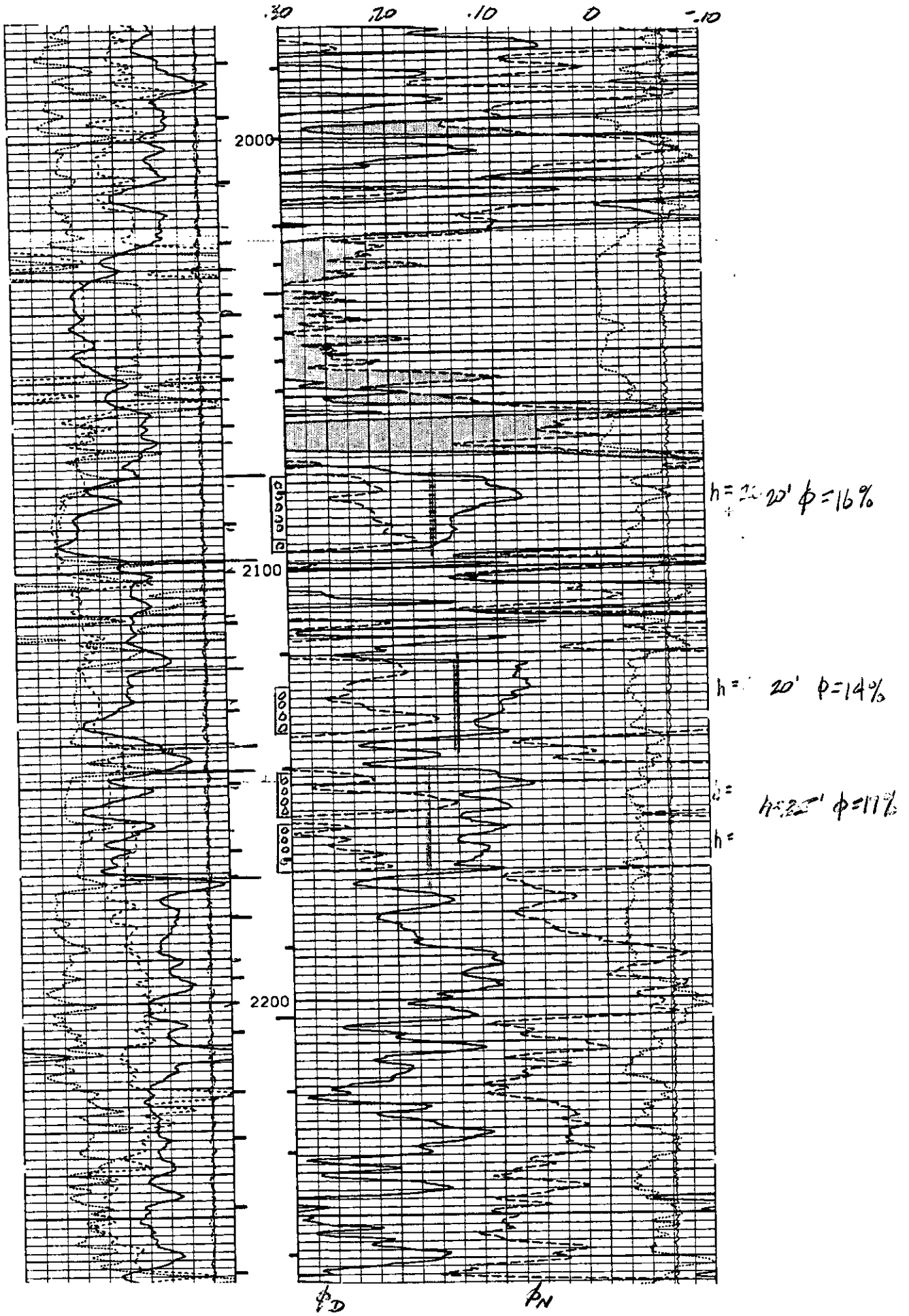
W057; Filtered with 8 micron paper.

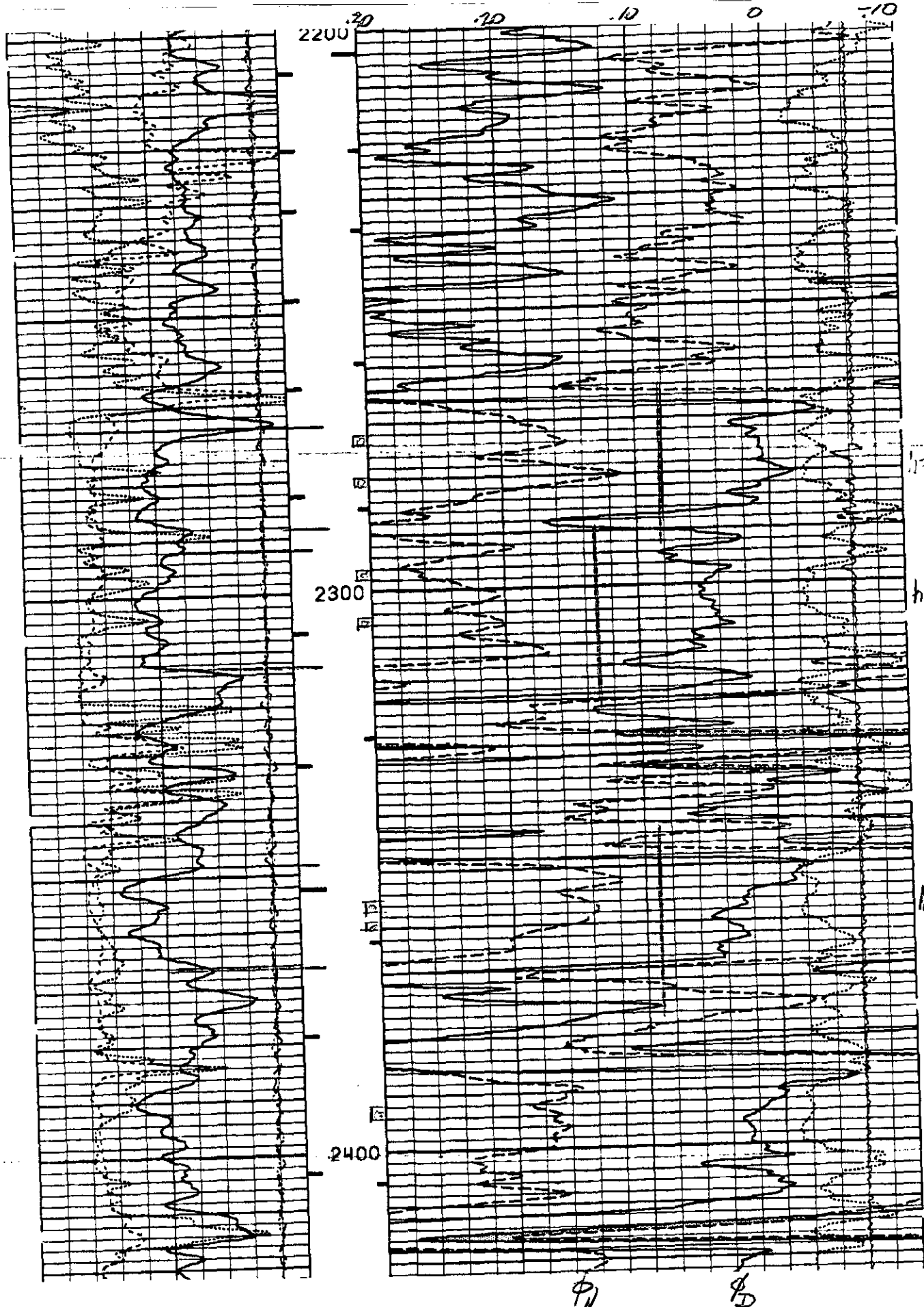
NOTICE: This report is for information only, and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage, regardless of cause, resulting from the use hereof.

SPECTRAL DENSITY DUAL SPACED NEUTRON

MAIN PASS: MATRIX = SAND. DENSITY = 2.68

GAMMA			AHV	NEUTRON POR	
0	GAMMA API	150	---->	30	PERCENT NEUTRON MATRIX = SAND
	CALIPER		BHV		DEN POROSITY
6	INCHES	16	<----	30	PERCENT MATRIX DENSITY = 2.68
	QUALITY LONG				TENSION
4.5		-1.5			10000 POUNDS
	QUALITY SHRT				DENSITY CORR
-4.5		.5			-.25 GM/CC





$h=13' \phi=8\%$

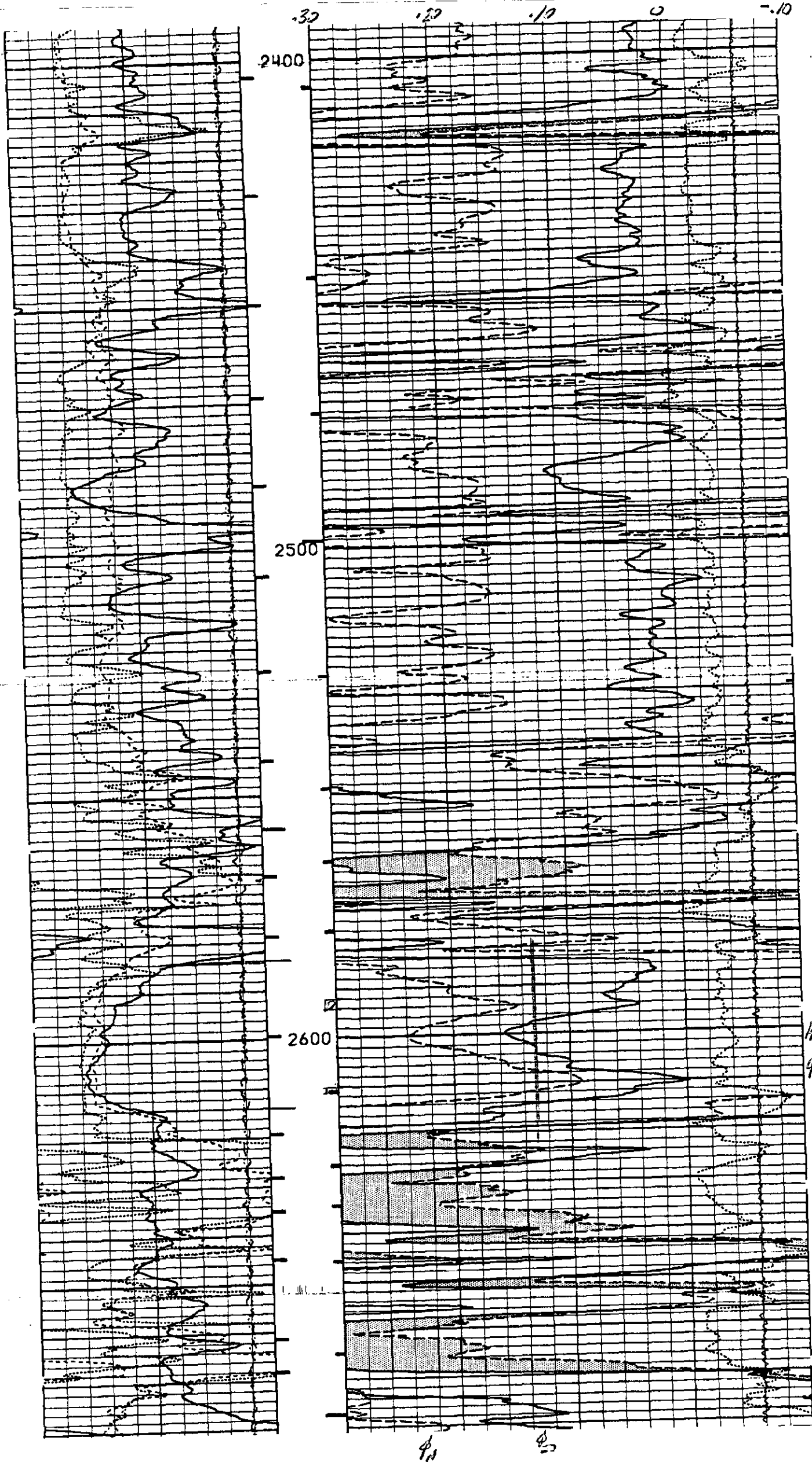
$h=21' \phi=13\%$

$h=3' \phi=9\%$

X

ϕ_N

ϕ_D



$h=30'$
 $\phi=13\%$

$$\tau_{10.11} = \phi h = 19.24$$

$$1325^{\circ} \cdot \pi \cdot 19.24 = 19352.89$$

Andrews, David

From: James_Adkins@oxy.com
Sent: Wednesday, February 18, 2009 11:18 AM
To: Andrews, David
Cc: King, Kevin
Subject: Hall Plot CC 629-1
Follow Up Flag: Follow up
Flag Status: Red
Attachments: 629-1 INJECTION TEST with plots 3rd update.xls

Hi Dave!

Just an update on the injection test...

We had a well defined frac gradient of 0.82 psi/ft from the original completion frac.

Our injection test seems to confirm that number. We got close to but did not exceed that gradient. There was no breakover.

I will make sure you all get a copy of the original frac report to go with the attached data.

We have quartz gauges in the hole and are doing an extended fall test.

In Summary: We were able to establish an acceptable injection rate while staying under the frac gradient.

We have put about 13,700 barrels of water into the well and established what we feel is an acceptable leakoff rate.

We should finish up this week. We will not need to exceed the 20,000 barrels approved for the test.

I have attached an excel file with tabs for the data, a Rate and Pressure vs. Time plot and a Hall Plot.

We are preparing an application since we think this will make an acceptable disposal well.

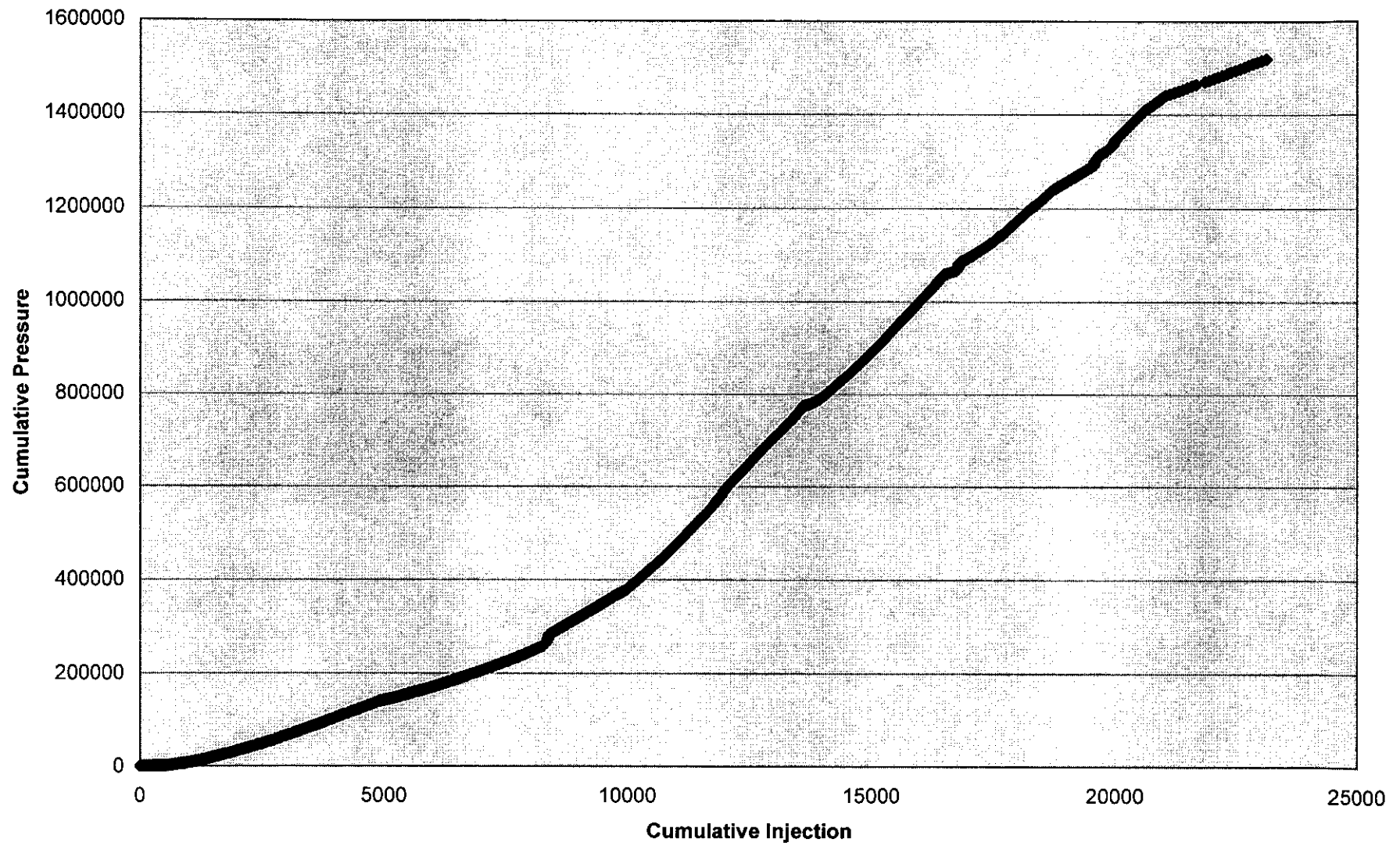
Thanks! *Jaime*

Jaime Adkins
Sr. Operations Engineer
OXY USA Inc.
760 Horizon Drive, Suite 101
Grand Junction, CO 81506

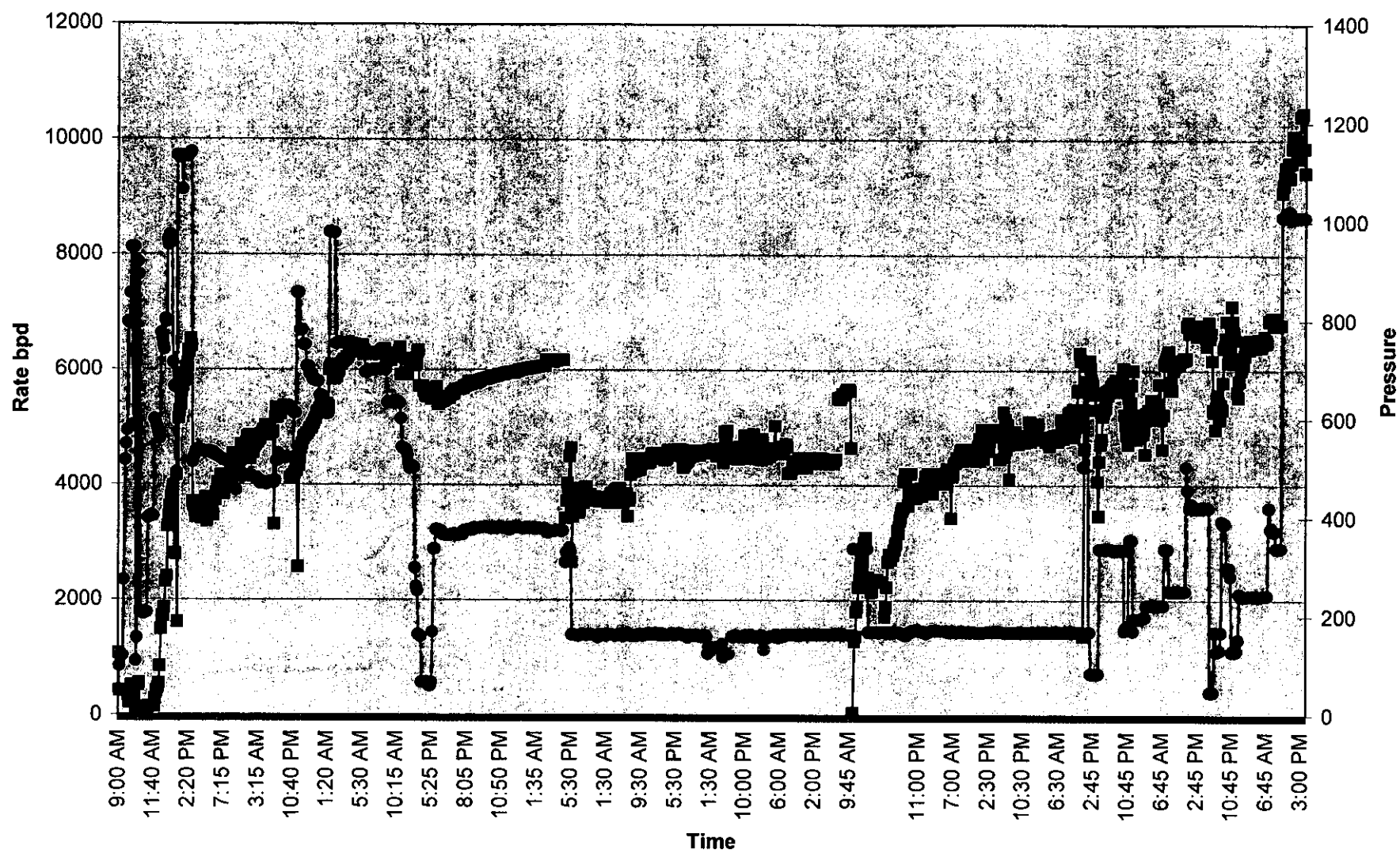
03/31/2009

970.263.3623 Direct
970.462.1205 Cell
e-mail: James_Adkins@oxy.com

Hall Plot CC 629-1 Injection Test



629-1 Injection test





OXY USA WTP LP
A subsidiary of Occidental Petroleum Corporation



760 Horizon Drive, Suite 101
Grand Junction, CO 81506

March 30, 2009

Mr. David Dillon
Colorado Oil and Gas Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

Re: OXY USA WTP LP, Cascade Creek 629-1, Injection Limitation Letter

Dear Mr. Dillon:

As a follow up to our recent conversations, please find the attached letter from Chevron U.S.A. Inc. Chevron's letter indicates their agreement to our proposed Cascade Creek 629-1 injection well provided OXY has a cumulative injection limit of 2.0 million barrels into the described formations as requested in the permit application submitted on March 12, 2009. In order to make this injection limitation binding, would you please include this limitation as a condition of approval to OXY's permit as the COGCC moves forward with permit review and approval.

If you have any questions or require any additional information about this application, the well bore or our proposed process, please feel free to contact either Jamie Adkins at 970-263-3623 or myself at 970-263-3628.

Sincerely,
OXY USA WTP LP



Chris Clark
Regulatory Coordinator

CC: Kevin Goldstein, Chevron U.S.A. Inc.
Jamie Adkins, OXY USA WTP LP

Enclosures: Chevron U.S.A. Inc. letter dated March 25, 2009



Kevin Goldstein
Landman
Piceance Basin

MidContinent/Alaska
Chevron U.S.A. Inc.
11111 S. Wilcrest, Houston, TX 77099
P.O. Box 36366, Houston, TX 77236
Tel 281 561 3722
Fax 866 228 5093
kjgo@chevron.com

March 25, 2009

Chris Clark
Regulatory Coordinator
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506

Re: Cascade Creek 629-1 Injection Well Application
SWSW, Section 29, Township 6 South, Range 97 West, 6th P.M.
Garfield County, Colorado

Mr. Clark,

Chevron U.S.A. Inc. (Chevron) received notice from OXY USA WTP LP (Oxy) of its intent to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for the above referenced well on March 16, 2009 and subsequent corrected Mineral Owner Notice on March 23, 2009. Recent discussions between Chevron and Oxy have resulted in the parties agreeing Oxy will incorporate a cumulative injection volume limitation of 2.0 million barrels into the COGCC permit conditions of approval.

Please inform me when you have submitted said change to your COGCC permit application so that I can contact the COGCC to verify same. Once verified, Chevron will not protest Oxy's application, assuming no other changes are made to same.

Sincerely,

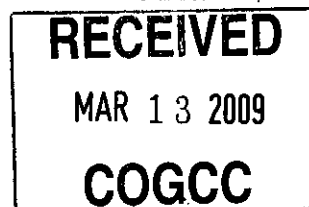
A handwritten signature in black ink, appearing to read "K. Goldstein", written over a horizontal line.

Kevin Goldstein



OXY USA WTP LP
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506



March 12, 2009

Chevron USA, Inc.
Land Department
11111 S. Wilcrest
Houston, TX 77099

**RE: Mineral Owner Notice of OXY's Proposed 629-1 Injection Well Application
SWSW, Section 29, Township 6 South, Range 97 West, 6th P.M.
Garfield County, Colorado**

Dear Mineral Owner:

OXY USA WTP LP proposes to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for its existing Cascade Creek 629-1 well. In accordance with COGCC rule (325.i), OXY is providing this notice letter to Chevron USA, Inc. which has been identified as the only mineral owner within ¼ mile of the proposed injection well (see attached mineral owner map). OXY's proposed 629-1 Injection Well will be a dedicated injection well targeting the Wasatch and Ohio Creek formations for disposal of produced water. OXY proposes to begin injection activities mid-summer 2009.

As described in COGCC rule 325.i, any person who would be directly and adversely affected or aggrieved by the authorization of the underground disposal into the proposed injection zone may file, within fifteen (15) days of notification, a written request for a public hearing before the Commission, provided such request meets the protest requirements specified in subparagraph m. of Rule 325. Written protest shall specifically provide information on (1) possible conflicts between the injection zone's proposed disposal use and present or future use as a source of drinking water or present or future use as a source of hydrocarbons, or (2) operations at the well site which may affect potential and current sources of drinking water.

Please let the Commission or OXY know if you have any questions, comments, or if you require additional information regarding the proposed injection well. The COGCC can be reached at (303) 894-2100. OXY can be reached at (970) 263-3628 or via email at chris_clark@oxy.com.

Sincerely,
OXY USA WTP LP



Chris Clark
Regulatory Coordinator

Enclosure: Mineral Owner Map
Sent Certified: 7006 2150 0001 6759 2258

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Chevron USA, Inc
Land Dept.
11111 S. Wilcrest
Houston, TX 77099

2. Article Number

(Transfer from service label)

7006 2150 0001 6759 2258

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?

If YES, enter delivery address below:

☐ Yes☐ No

3. Service Type

☐ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

COGCC

MAR 13 2009

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7006 2150 0001 6759 2258

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

U.S. Postal Service™

CERTIFIED MAIL™ RECEIPT

(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

OFFICIAL USE

Postage

\$

Certified Fee

Return Receipt Fee
(Endorsement Required)Restricted Delivery Fee
(Endorsement Required)

Total Postage & Fees

\$

Postmark
Here

Sent To

Street, Apt. No.,
or PO Box No.

City, State, ZIP+4

Chevron USA, Inc.

11111 S. Wilcrest

Houston, TX 77099

PS Form 3800, August 2006

See Reverse for Instructions



OXY USA WTP LP
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

March 19, 2009

Chevron USA, Inc.
Land Department
11111 S. Wilcrest
Houston, TX 77099

RE: Correction to Mineral Owner Notice for OXY's Proposed 629-1 Injection Well dated March 12, 2009.

Dear Mineral Owner:

Please find the attached and corrected Mineral Owner Notice for OXY USA WTP LP proposed 629-1 injection well located in the SWSW of Section 29, Township 6 South, Range 97 West, in Garfield County, Colorado.

The original letter errantly listed the target injection formations as the Wasatch and Ohio Creek formations. The attached letter being consistent with the application as submitted correctly identifies the target injection formations as the Wasatch and the Fort Union formations. In addition a copy of the newly amended letter will be forwarded to Dave Dillon with the Colorado Oil and Gas Conservation Commission so that it can be inserted into the official record for the proposed action, and hand delivered on March 19, 2009 to Kieth A. Hejl the Chevron Completion Engineer for the Piceance area, located in Grand Junction office.

Once again, we apologize for any confusion or inconvenience this error may have caused. If you have questions, comments, or if you require additional information regarding the proposed injection well. Please feel free to contact either Jamie Adkins, 970-263-3623 or myself at 970-263-3628 or by e-mail at chris_clark@oxy.com.

Sincerely,
OXY USA WTP LP



Chris Clark
Regulatory Coordinator



OXY USA WTP LP
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

March 19, 2009

Chevron USA, Inc.
Land Department
11111 S. Wilcrest
Houston, TX 77099

**RE: Mineral Owner Notice of OXY's Proposed 629-1 Injection Well Application
SWSW, Section 29, Township 6 South, Range 97 West, 6th P.M.
Garfield County, Colorado**

Dear Mineral Owner:

OXY USA WTP LP proposes to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for its existing Cascade Creek 629-1 well. In accordance with COGCC rule (325.i), OXY is providing this notice letter to Chevron USA, Inc. which has been identified as the only mineral owner within ¼ mile of the proposed injection well (see attached mineral owner map). OXY's proposed 629-1 Injection Well will be a dedicated injection well targeting the Wasatch and Fort Union formations for disposal of produced water. OXY proposes to begin injection activities mid-summer 2009.

As described in COGCC rule 325.i, any person who would be directly and adversely affected or aggrieved by the authorization of the underground disposal into the proposed injection zone may file, within fifteen (15) days of notification, a written request for a public hearing before the Commission, provided such request meets the protest requirements specified in subparagraph m. of Rule 325. Written protest shall specifically provide information on (1) possible conflicts between the injection zone's proposed disposal use and present or future use as a source of drinking water or present or future use as a source of hydrocarbons, or (2) operations at the well site which may affect potential and current sources of drinking water.

Please let the Commission or OXY know if you have any questions, comments, or if you require additional information regarding the proposed injection well. The COGCC can be reached at (303) 894-2100. OXY can be reached at (970) 263-3628 or via email at chris_clark@oxy.com.

Sincerely,
OXY USA WTP LP



Chris Clark
Regulatory Coordinator

Enclosure: Mineral Owner Map

Certified Mail: 7006 2150 0001 6759 1626

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COGCC**List oil/gas wells within 1/2 mile**

Radius	API Number	Well Name	Owner
1/4 mile	05-045-11809	Cascade Creek 697-29-54D	OXY USA WTP LP
1/4 Mile	05-045-11810	Cascade Creek 697-29-34D	OXY USA WTP LP
1/4 mile	05-045-11811	Cascade Creek 697-29-29D	OXY USA WTP LP
1/4 Mile	05-045-11812	Cascade Creek 697-29-46D	OXY USA WTP LP
1/4 mile	05-045-11813	Cascade Creek 697-29-45D	OXY USA WTP LP
1/4 Mile	05-045-11926	Cascade Creek 697-29-36D	OXY USA WTP LP
1/4 Mile	05-045-06857	Cascade Creek 629-1	OXY USA WTP LP
1/4 Mile	05-045-13433	Cascade Creek 629-23-42	OXY USA WTP LP
1/4 Mile	05-045-13497	Cascade Creek 632-13-22	OXY USA WTP LP
1/4 mile	05-045-11766	Cascade Creek 697-32-12D	OXY USA WTP LP
1/4 Mile	05-045-11767	Cascade Creek 697-29-58D	OXY USA WTP LP
1/4 mile	05-045-11768	Cascade Creek 697-29-60D	OXY USA WTP LP
1/4 Mile	05-045-11769	Cascade Creek 697-32-09D	OXY USA WTP LP
1/4 mile	05-045-11770	Cascade Creek 697-32-18D	OXY USA WTP LP
1/4 Mile	05-045-13290	Cascade Creek 697-32-10D	OXY USA WTP LP
1/4 mile	05-045-13291	Cascade Creek 697-32-01D	OXY USA WTP LP
1/4 Mile	05-045-13292	Cascade Creek 697-32-03D	OXY USA WTP LP
1/2 Mile	05-045-06869	Cascade Creek 629-2	OXY USA WTP LP
1/2 Mile	05-045-10563	Cascade Creek 697-29-38D	OXY USA WTP LP
1/2 Mile	05-045-10564	Cascade Creek 697-29-30D	OXY USA WTP LP
1/2 Mile	05-045-10565	Cascade Creek 697-29-26D	OXY USA WTP LP
1/2 Mile	05-045-10566	Cascade Creek 697-29-10D	OXY USA WTP LP
1/2 Mile	05-045-10336	Cascade Creek 632-21-41	OXY USA WTP LP

After reviewing the cement on the surrounding wells, we concluded there will not be any need to remediate any of the surrounding wells

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OXY USA WTP LP
Surface Owners within ¼ mile

OXY owns all surface rights at and within the ¼ mile radius of the Cascade Creek 629-1.

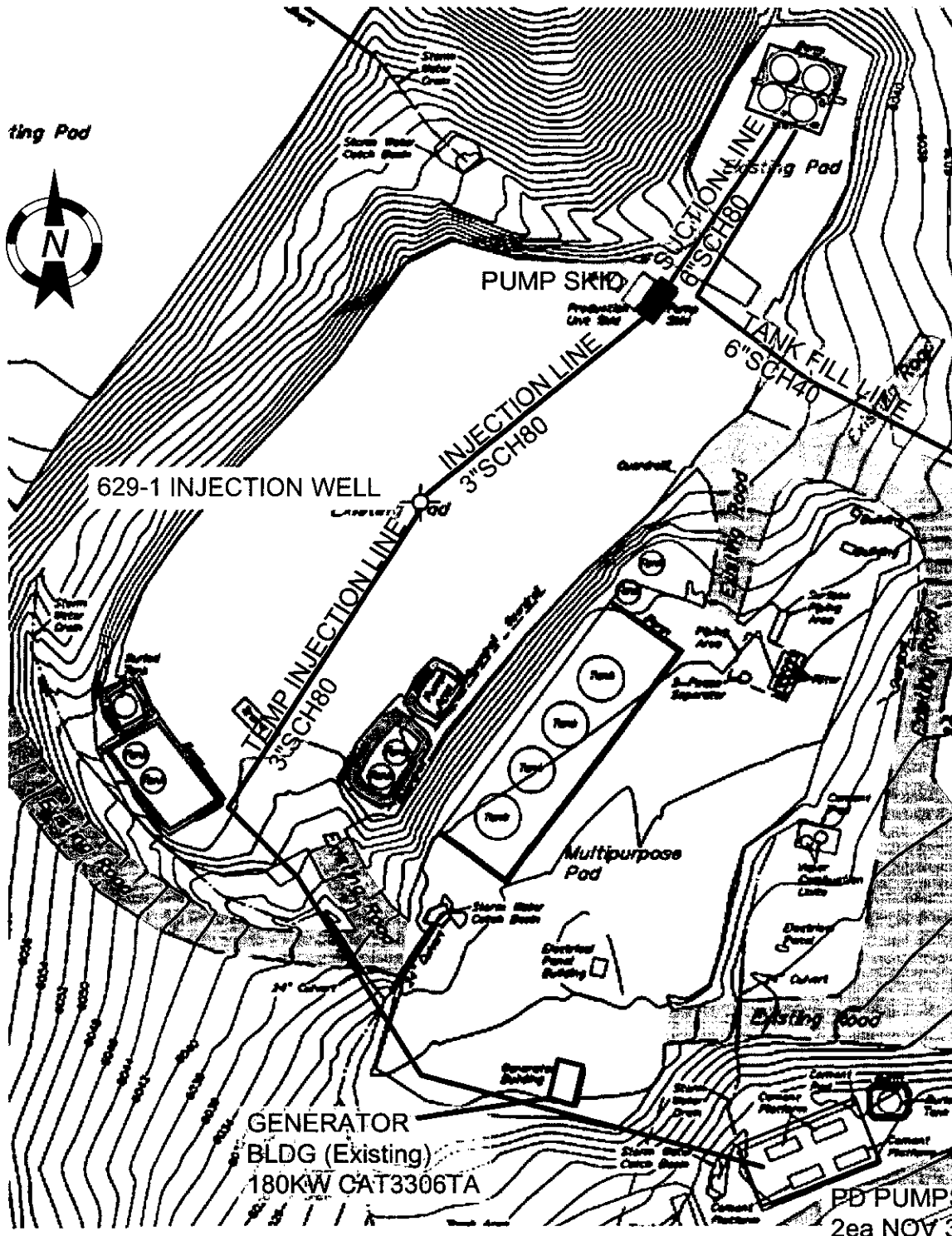
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OXY USA WTP LP
Mineral Owners within ¼ mile

OXY owns the mineral rights at the Cascade Creek 629-1 location. It was determined that Chevron is the only other mineral owner within ¼ mile.



629-1 SALT WATER DISPOSAL - Surface Facilities Layout (Design)

LOCATED IN
SECTION 29, T6S, R97W, 6th P.M.
GARFIELD COUNTY, COLORADO

SUPPLY – TANK BATTERY
4x 500bbl Coated Tanks
1x 2stage 100/50µm Sock Filter Pods

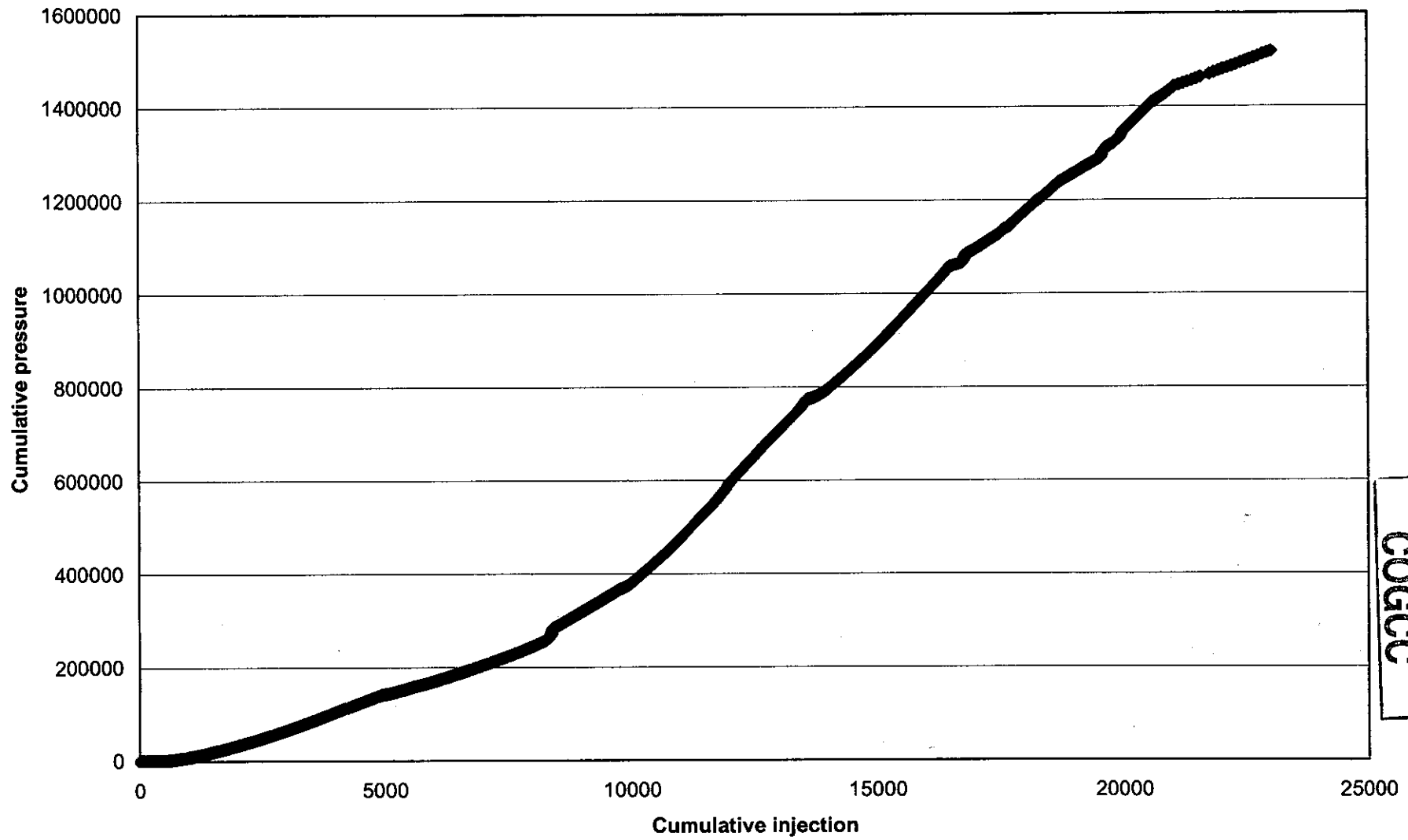
INJECTION PUMP / FILTRATION SKID
2x 30HP Elec Drive PD Pumps
2x 2stage 50/15µm Sock Filters
1x 15HP Cent Charge Pump

- Pump: 1000bwpd/1000psi
- Filtration: <15µm

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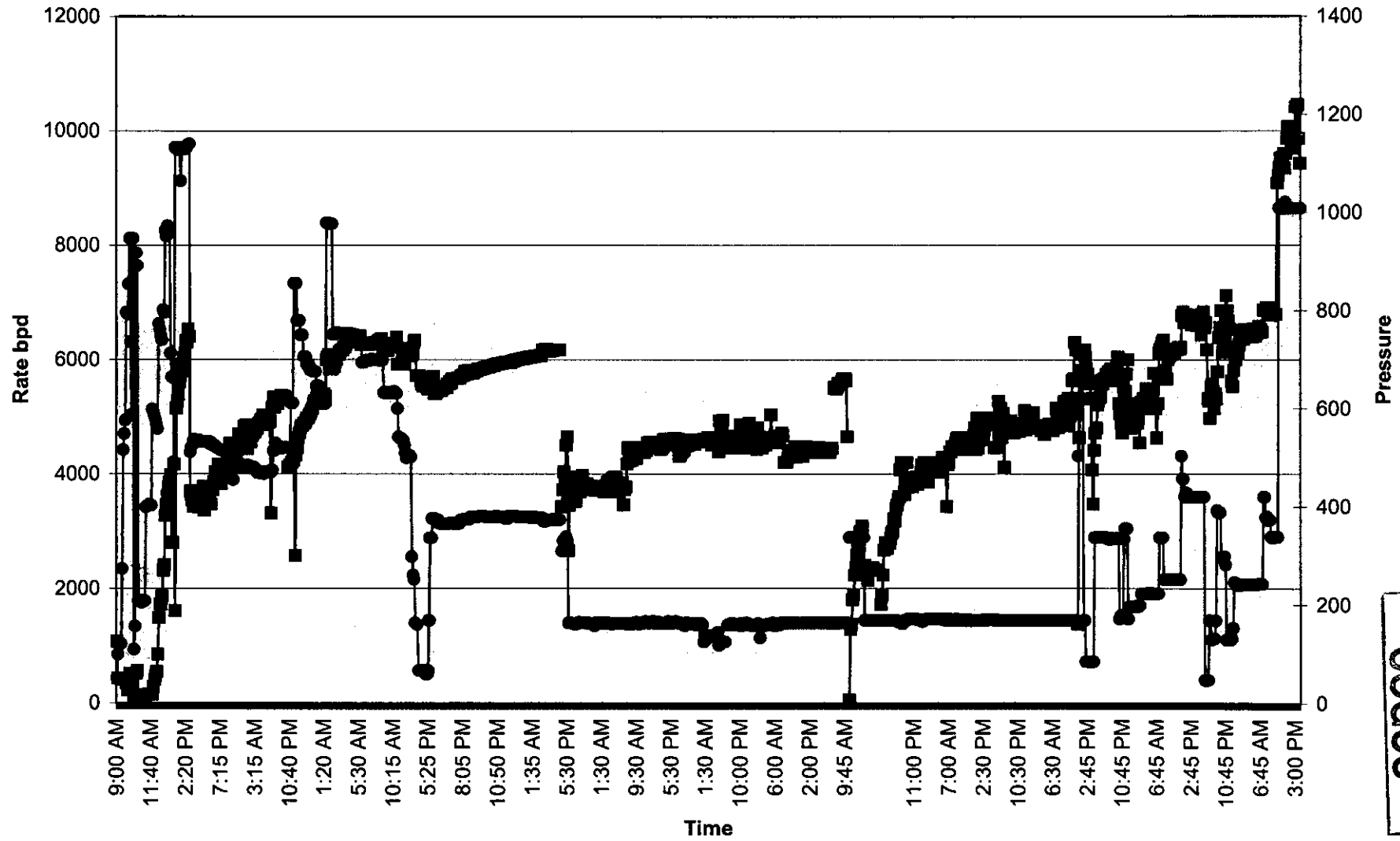
LINES/DIAGRAMS NOT TO SCALE

Hall Plot - 629-1 Injector



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MAR 13 2009
COGCC

629-1 Injection test



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MAR 13 2009

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HALLIBURTON

DUAL INDUCTION
SHORT GUARD LOG

COMPANY OXY USA INC.

WELL CASCADE CREEK 629-1

FIELD GRAND VALLEY

COUNTY GARFIELD

STATE CO

API NO 05-045-6857
LOCATION SM/4 OF SM/4
943 FSL AND 1198 FWL

045-06857

SECT 29

TMP 65 RGE 97M

SDL/DSN/ML

ELEV. 6050
FT. ABOVE PERM DATUM

ELEV. K.B. 6062
D.F. 6061
C.L. 6050

PERMANENT DATUM CL
LOG MEASURED FROM KB OR 12
DRILLING MEASURED FROM CL

DATE 06/25/94

RUN NO. ONE

DEPTH-DRILLER 7085

DEPTH-LOGGER 7044

BITM. LOG INTER 7042

TOP LOG INTER SURE

CASING-DRILLER 9.625@415

CASING-LOGGER 415

BIT SIZE 7.875

TYPE FLUID IN HOLE LSSD

DENS. : VISC. 10.1 : 42

PH : FLUID LOSS 8.0 : 8.8

SOURCE OF SAMPLE FLOWLINE

RM @ MEAS. TEMP. 2.22 @ 78 F

RMF @ MEAS. TEMP. 1.52 @ 80 F

RMC @ MEAS. TEMP. 3.09 @ 80 F

SOURCE RMF:RMC : : :

RM @ BHT 0.89 @ 205 F

TIME SINCE CIRC. 5 HOURS

TIME ON BOTTOM 20:00 06/24

MAX. REC TEMP. 205 F @ ID

EQUIP. : LOCATION 52546:VERNL

RECORDED BY E. VOGLER

WITNESSED BY D. FOWLER

RECEIVED

JUN 16 1995

COLO. OIL & GAS CONS. COMM.

STATE CO

OTHER SERV. CES

BCS

FMS

RSCCT

HIGH
HOLE

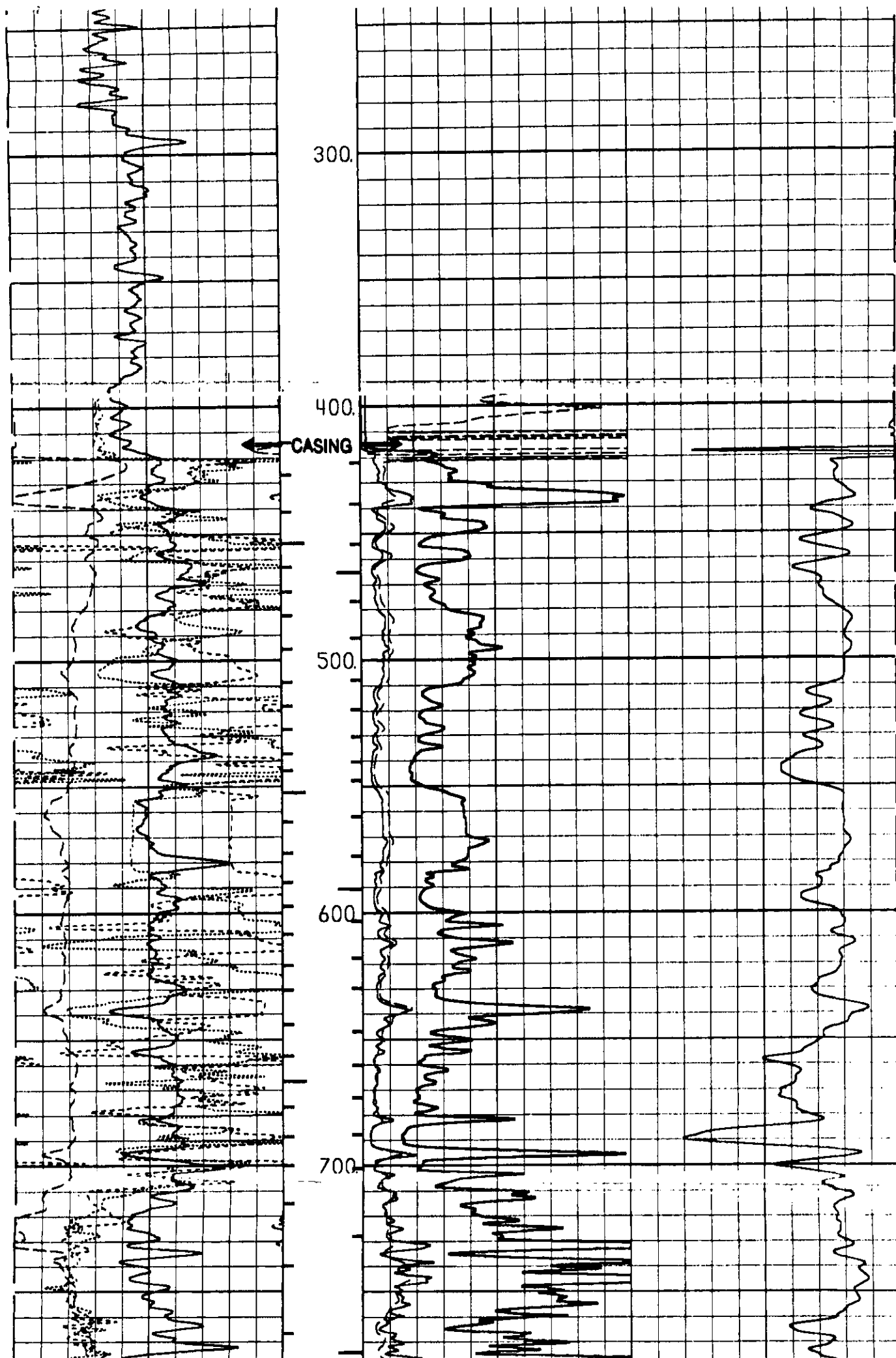
FOLD HERE

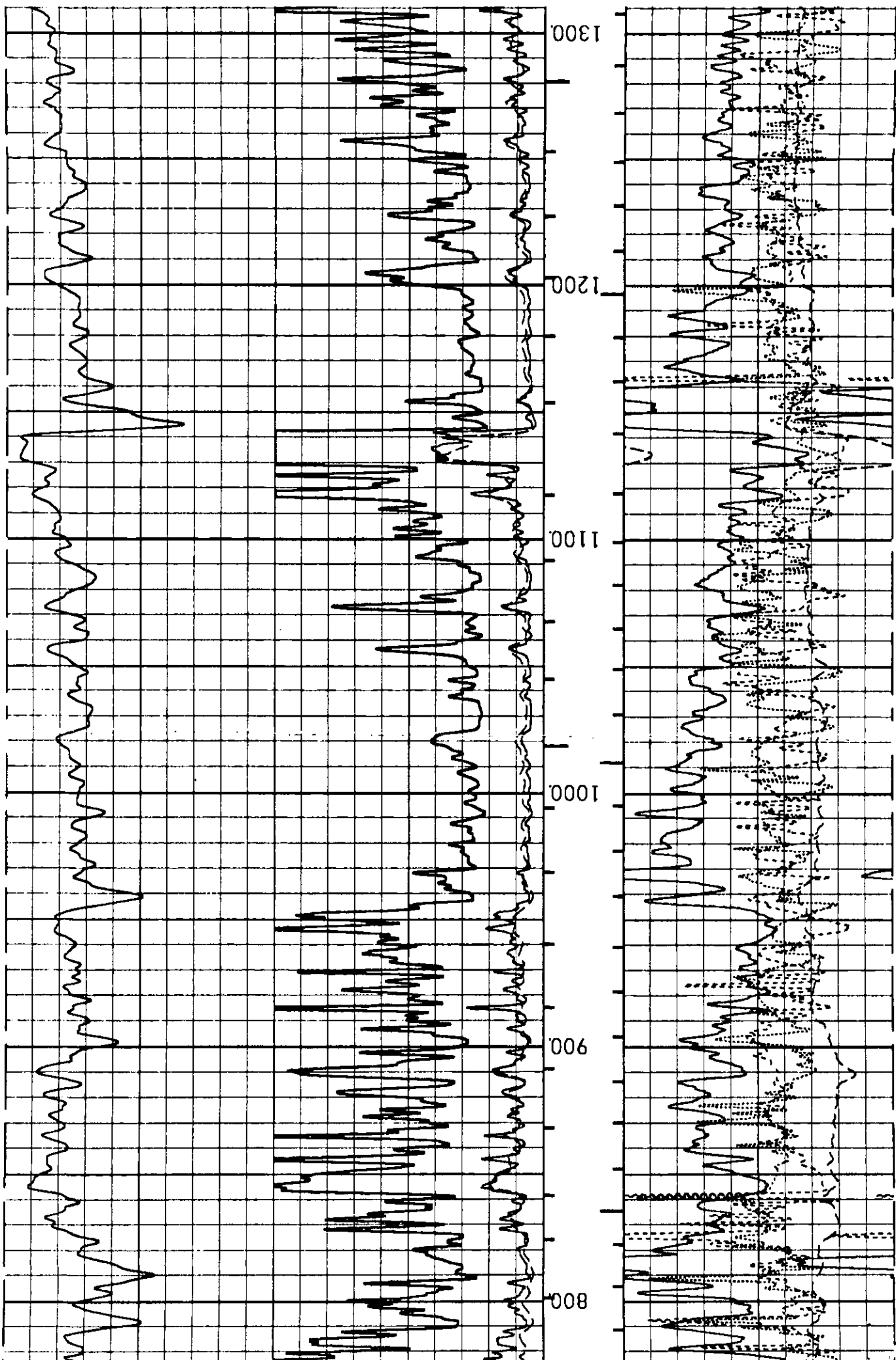
SERVICE TICKET NO.: 568673				API SERIAL NO.: 05-045-6857				PGM VERSION: 2.60			
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLES				RESISTIVITY SCALE CHANGES							
DATE: SAMPLE NO.	/ /	:	/ /	:	TYPE LOG	DEPTH	SCALE UP HOLE	SCALE DOWN HOLE			
DEPTH-DRILLER											
TYPE FLUID											
IN HOLE											
DENS. : VISC	:		:								
PH : FLUID LOSS	:		:								
SOURCE OF SAMPLE					RESISTIVITY EQUIPMENT DATA						
RM @ MEAS TEMP	@		@	RUN NO	TOOL TYPE & NO	PAD TYPE	TOOL POS.	OTHER			
RMF @ MEAS TEMP	@		@	ONE	DSTU BLUE		CENT				
RMC @ MEAS TEMP	@		@	ONE	FWST BLUE		CENT				
SOURCE: RMF:RMC	:		:	ONE	DILT B109600		CENT				
RM @ BHT	0.89 @ 205 F		@	ONE	SGRD B108965		CENT				
RMF @ BHT	0.62 @ 205 F		@								
RMC @ BHT	1.27 @ 205 F		@								
EQUIPMENT DATA											
GAMMA			ACOUSTIC			DENSITY			NEUTRON		
RUN NO.	ONE		RUN NO.	ONE		RUN NO.			RUN NO.		
SERIAL NO.	108642		SERIAL NO.	BLUE		SERIAL NO.			SERIAL NO.		
MODEL NO.	NGRT-A		MODEL NO.	FWST		MODEL NO.			MODEL NO.		
	2 625		NO. OF CENT.	2		DIAMETER.			DIAMETER		

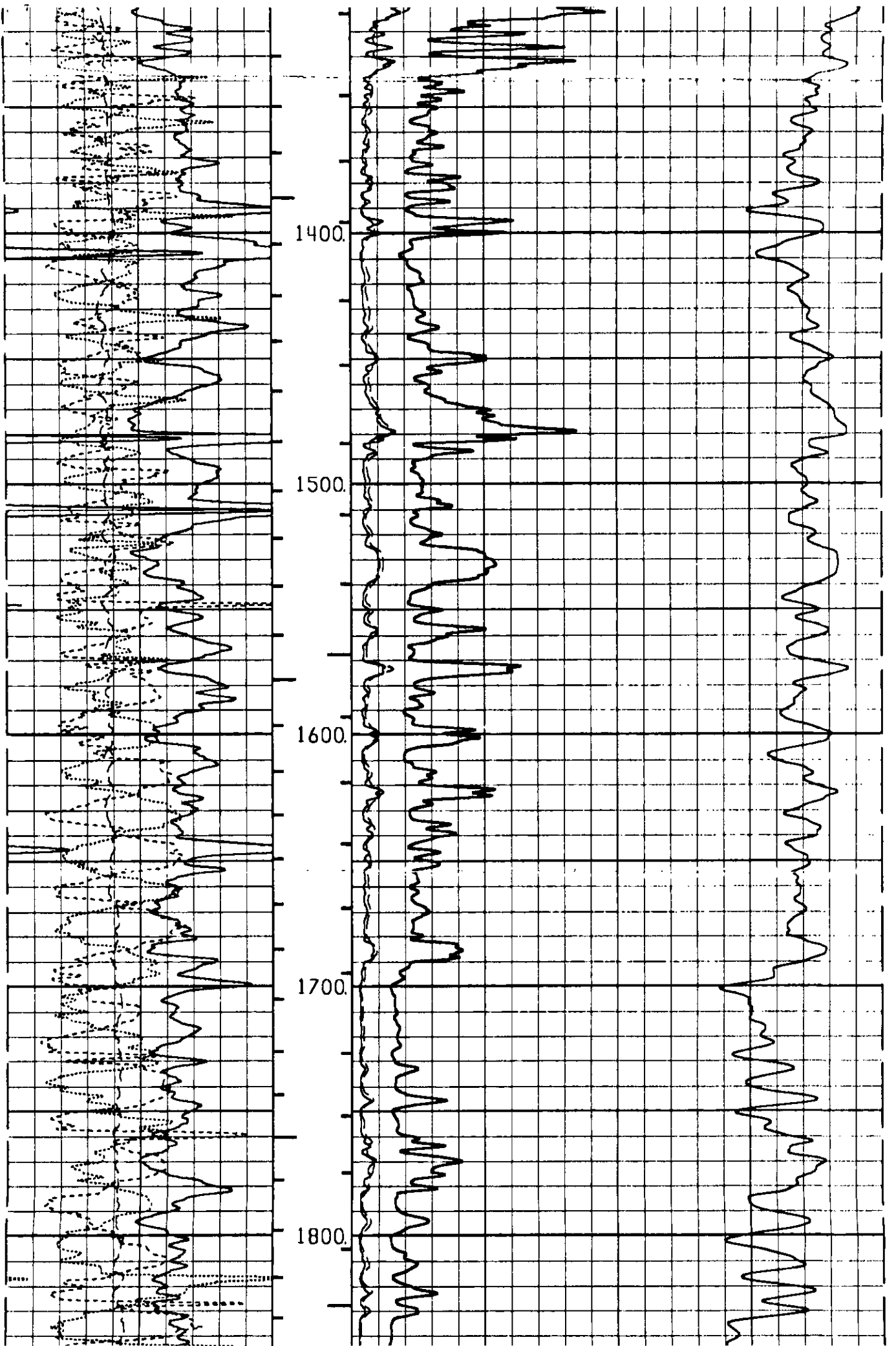
DIAMETER		3.000		LOG TYPE		LOG TYPE	
DETECTOR MODEL NO.		M		SPACING		10'	
TYPE		SCINT		SOURCE TYPE		SOURCE TYPE	
LENGTH		4"		LSA [Y/N]		YES	
DISTANCE TO SOURCE		NA		FWDA [Y,N]		YES	
				STRENGTH		STRENGTH	
LOGGING DATA							
GENERAL			GAMMA		ACOUSTIC		DENSITY
RUN	DEPTH	SPEED	SCALE		SCALE		SCALE
NO	FROM	TO	FT/MIN	L	R	L	R
ONE	7044	415	30	0	150	60	0
REMARKS: FWST MODE -9-							
SONIC DIL RAN IN COMBINATION							
ANNULAR HOLE VOLUME BASED ON 5.5" CASING							
THANK YOU FOR USING HALLIBURTON ENERGY SERVICES, VERNAL UT (801)-789-3155							
CREW: J. PRION, J. MELANCON, T. CUTLER, E. VOGEL // RIG // EXETER # 3							
<small>HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.</small>							

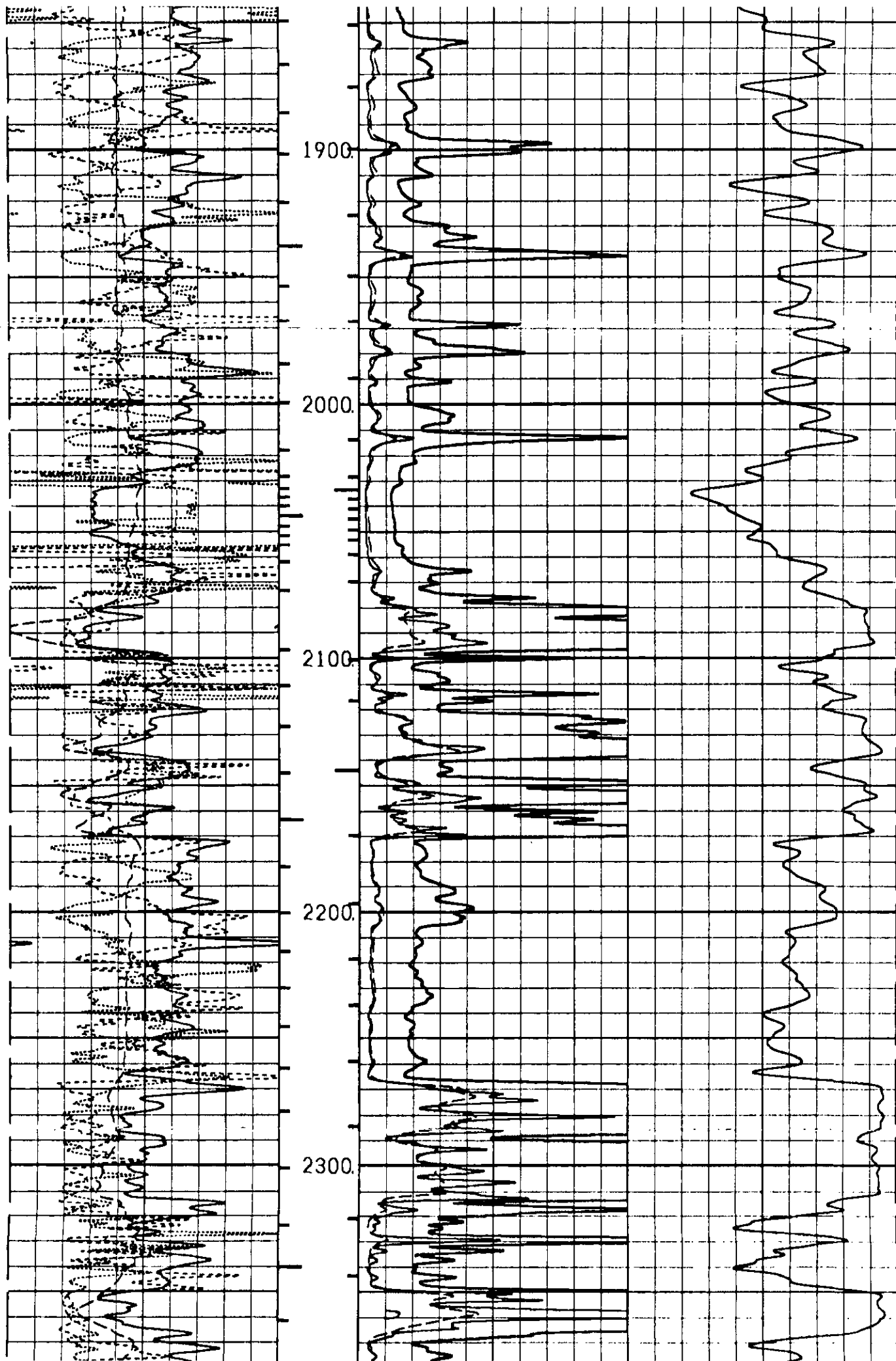
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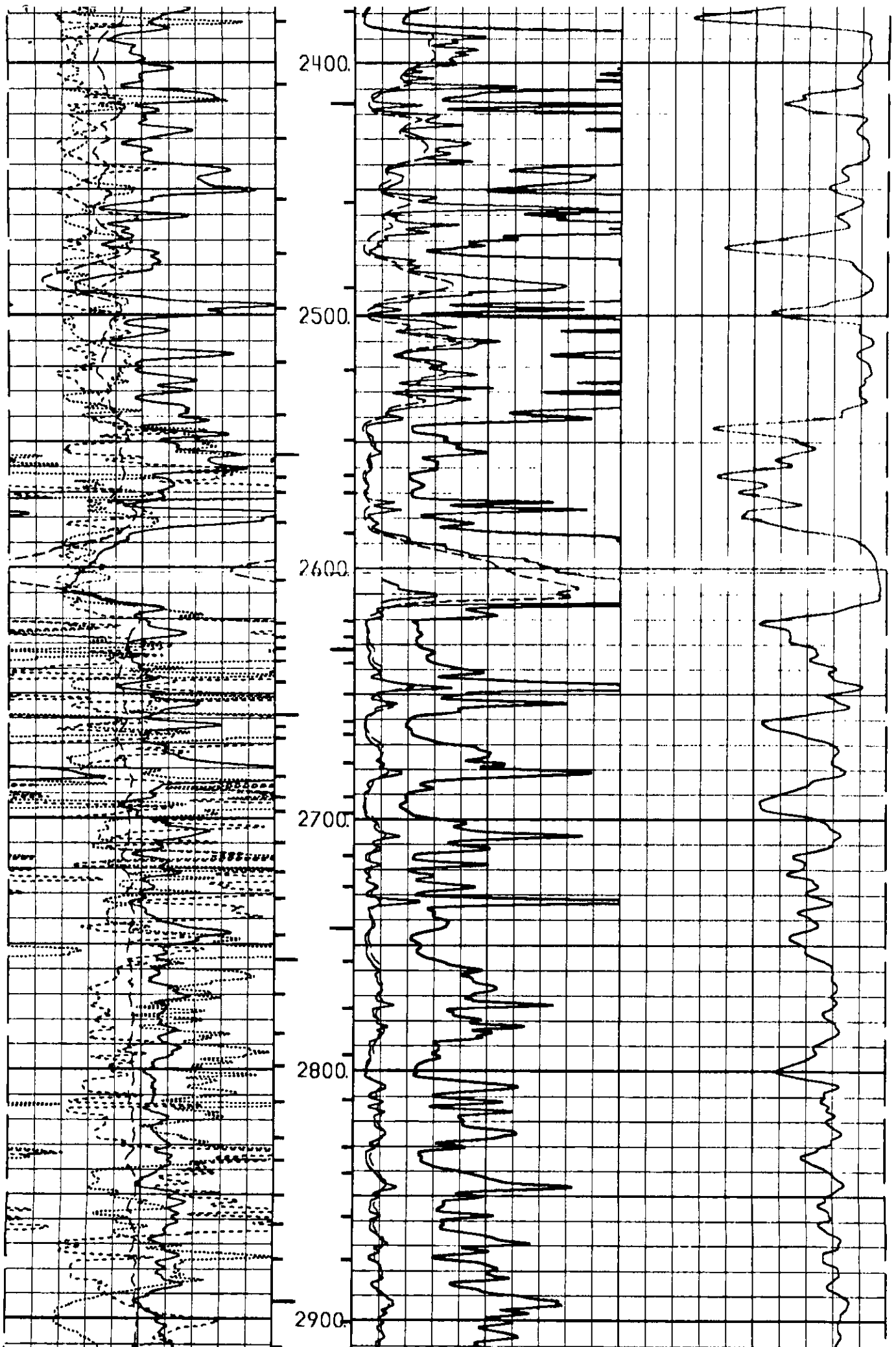
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0 +J[- 100	<AHV<	0 OHMM 100	500 MMHO 0
GAMMA	BHV	SH GUARD RES	
0 GAMMA API 150	>BHV>	0 OHMM 100	
CALIP 1-3		SH GUARD RES	
6 INCHES 16		0 OHMM 20	
CALIP 2-4			
6 INCHES 16			
<div> </div>			

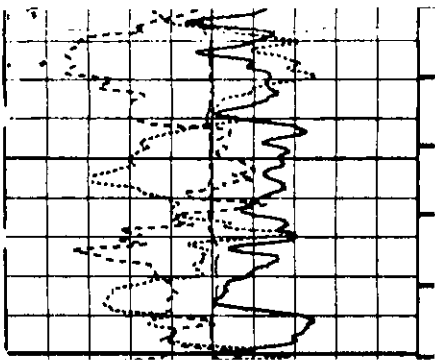




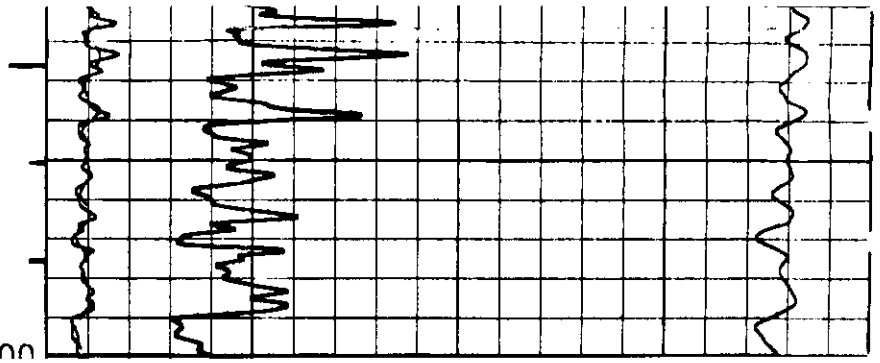








3000



OXY USA INC.
CASCADE CREEK 629-1 INJECTION WELL
SW SW SECTION 29 T6S R97W
GARFIELD COUNTY, COLORADO
SINGLE-WELL, NON-COMMERCIAL UNDERGROUND INJECTION PERMIT CHECKLIST

- 1) Receipt & approval dates for Form 2 – Application for Permit to Drill (325.a.) APP'D APR 16, 2007
- 2) Receipt & approval dates for Form 21 – Mechanical Integrity Test (325.e.) RCVD 4/6/09 OK
 - i) Test used to check for vertical fluid movement in channels adjacent to well bore (326.a.(2)) NA
- 3) Receipt & approval dates for Form 26 – Source of Prod. Water for Disposal (325.c.(5)) 3/13/09
- 4) Receipt & approval dates for Form 31 – Underground Inj. Form. Permit Ap. (325.a.) RCVD 3/13/09
- 5) Receipt & approval dates for Form 33 – Injection Well Permit Application (325.a.)M RCVD 3/13/09
- 6) Hearing date, if approval withheld (325.b.) N/A
- 7) Name, description, and depth of injection formation (325.c.(1)) WASATCH 2078'-2170' FT UNION 2272'-2611'
- 8) Underground sources of drinking water (325.c.(1)) POSSIBLY UPPER WASATCH
- 9) Hydrologic information request to Division of Water Resources RCVD 4/8/09 OK
- 10) Fracture gradient of the injection formation (325.c.(1)) 0.82 PSI/FT (WASATCH ONLY)
- 11) Water analysis of injection formation, TDS (mg/l) (325.c.(1)) WASATCH 26,249 FT. UNION 35,114 OK ALSO LOCATIONS 4 FT. UNION
- ~~12) If TDS < 10,000 mg/l, is an aquifer exemption attached? (324B.)~~
 - ~~i) Was an aquifer exemption public notice published? (324B.b.)~~
 - ~~ii) Was a public hearing held? (324B.c.)~~
 - ~~iii) Was the aquifer exemption approved? (324B.d.)~~
 - ~~iv) Notice of approved aquifer exemption to Water Quality Control Commission~~
- 13) Base plat (¼-mile radius) with the following (325.c.(2)): YES
 - i) Location of disposal well YES
 - ii) location of all oil & gas wells YES
 - iii) location of water wells with depths NONE
 - iv) name and address of surface owners YES - OXY
 - v) name and address of mineral owners YES - OXY
- 14) Base plat (½-mile radius) with oil & gas wells producing from the disp. zone (325.c.(2)) NO WASATCH OR FT. UNION
- 15) Base plat showing all surface and mineral owners of record if the well is part of a field-wide system (325.c.(2)) NONE
- 16) Remedial action plans for wells within ¼-mile of the disposal well (325.c.(2)) NONE REQUIRED
- 17) A resistivity log, description of stratigraphy and/or testing data (325.c.(3)) YES
- 18) A wellbore schematic showing casing, cement, bridge plugs, packers, perforations and any other relevant information (325.c.(4)) YES
- 19) A surface facilities diagram showing pipelines, tanks and any other relevant information for the injection system (325.c.(4)) YES

OXY USA INC.
CASCADE CREEK 629-1 INJECTION WELL
SW SW SECTION 29 T6S R97W
GARFIELD COUNTY, COLORADO
SINGLE-WELL, NON-COMMERCIAL UNDERGROUND INJECTION PERMIT CHECKLIST

- 20) Any proposed stimulation program (325.c.(6)) NONE
- 21) Estimated daily minimum and maximum injection volume (325.c.(7)) 0-2000 BWPD
- 22) Maximum injection pressure, calculated by COGCC (325.c.(7)) 803 PSI @ .82 PSI/FT (MIT TO 810 PSI)
- 23) Names and addresses of persons notified and copies of the notices (325.i) YES
- i) Surface and mineral owners within 1/4-mile YES - OXY / CHEVRON
- ii) Owners and operators of wells producing in the inj. zone within 1/2-mile NONE
- iii) Owners of cornering or contiguous units producing in the inj. zone, if greater than 1/2-mile N/R
- 24) Were the notices delivered by certified mail or personal delivery? (325.k.) PERSONAL - SAME COMPANY
- 25) Do the notices include instructions on public hearing requests? (325.l.) N/A - CERT - CHEVRON
- 26) Publish public notice with brief description of disposal application, including legal location,
proposed injection zone, depth of injection and other relevant information (325.n.) PUBLISHED 4/16/09
- 27) Any written requests for public hearing as a result of the notices? (325.m. or 325.n.) NONE
- 28) Was a surface owner agreement submitted? NOT REQ - OXY SURFACE OWNER
- 29) Was all information received by the 6-month deadline? (325.o.) YES
- 30) Was a 90-day extension granted? (325.o.) NA

NOTE: OFFSET LAND OWNER CHEVRON HAS REQUESTED A MAXIMUM INJ VOLUME OF
2,000,000 Bbls.

THIS VOLUME GIVES AN AREA OF INFLUENCE OF 425'



02062970



State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax: (303) 894-2109



FOR OGCC USE ONLY

RECEIVED

APR 27 2009

COGCC**INJECTION WELL PERMIT APPLICATION**

Submit a completed Form 33 with or after approval obtained on Form 31 (Underground Injection Permit Application) or you must have a previously approved Injection Well Permit.

1. Operator may not commence injection into this well until this form is approved.
2. Each individual injection well must be approved by this form.

Complete the Attachment Checklist

Oper OGCC

Current Wellbore Diagram	✓	
Proposed Wellbore Diagram	✓	

Well Name and Number: Logan Trail 28-10 SWD API No: 05-045-10976
 UIC Facility No: 159,275 (as assigned on an approved Form 31)
 Project Name: Logan Trail 28-10 SWD Operator Name: OXY USA INC.
 Field Name and Number: Logan Trail #51250 County: Garfield
 QtrQtr: NESE Sec: 28 Twp: 7S Range: 97W Meridian: 6th

CURRENT WELLBORE INFORMATION

	SIZE	DEPTH	NO. SACKS	CEMENT TOP	Cement Top Determined By:		
					CBL	CIRCULATED	CALCULATED
Surface Casing	8.625	1,017	395	surface	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Intermediate Casing (if any)					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Production Casing	4.5	6,154	1,070	250' 1000'	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Plug Back Total Depth: 6,109Tubing Depth: 3,353'Packer Depth: 3,340'WILLIAMS FORK Formation Gross Perforation Interval: 3,420' to 3,835'

Formation Gross Perforation Interval: _____ to _____

Formation Open Hole Interval (if any): _____ to _____

List below all Plugs, Bridge Plugs, Stage Cementing or Squeeze Work performed on this wellbore: (if more space needed, continue on reverse side of this form.)

1. CIBP was SET AT 4,480' W/ 2 SX CMT (ISOLATE WMFK PERFS 4,540' - 4,916'). CIBP was SET AT 4130' W/2 SX CMT TO FACILITATE CEMENTING.
2. PERF AT 3,900' - 3,901' (3 jsf, 120 PHASING) SET CIBR 3850', PUMP 161 SX 13.0 PPG SLURRY N2 FOAMED TO 9.0 PPG + 47 SX W/O N2 AT 13.0 PPG
3. RAN IBC CEMENT MAP, CEMENT ADEQUATE, APPROVED BY DAVE ANDREWS
4. RAN STEP-RATE TEST 3X ESTABLISHED ISIP = 862 PSIG FRAC GRADIENT = 0.69 PSI/FT

Describe below any changes to the wellbore which will be made upon conversion. (This includes but not limited to changes of tubing and packer setting depths, any additional squeeze work for aquifer protection or casing leaks, setting of bridge plugs to isolate non-injection formations.)

- 1.
- 2.
- 3.
- 4.

Comments:

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Chris Clark

Signed: _____

Title: Regulatory AdvisorDate: 4-24-09OGCC Approved: Denise M. OuykTitle: OGCC Program Administrator 7-17-09MAX. SURFACE INJECTION PRESSURE: 200 psiIf Disposal Well, MAX. INJECTION VOL. LIMIT: 37.69 x 10³ barrels

CONDITIONS OF APPROVAL, IF ANY:

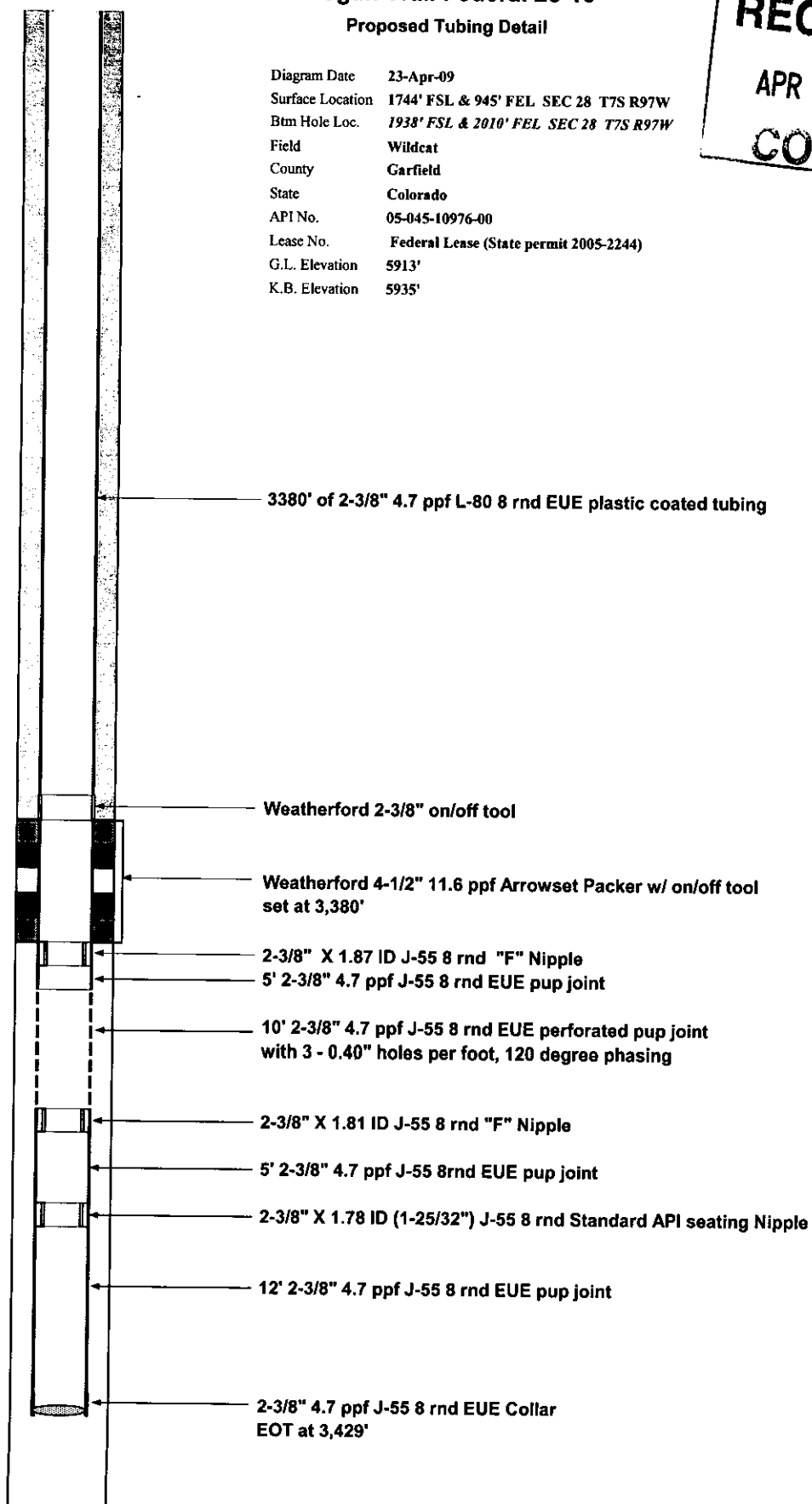
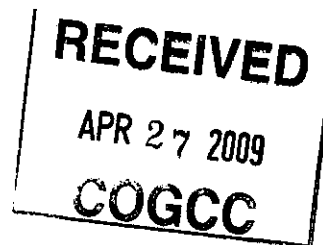
37.69 x 10³
D.M.O.

OXY USA INC.

Logan Trail Federal 28-10

Proposed Tubing Detail

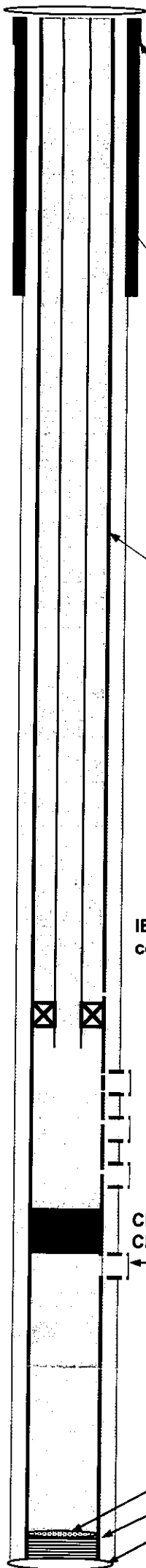
Diagram Date 23-Apr-09
Surface Location 1744' FSL & 945' FEL SEC 28 T7S R97W
Btm Hole Loc. 1938' FSL & 2010' FEL SEC 28 T7S R97W
Field Wildcat
County Garfield
State Colorado
API No. 05-045-10976-00
Lease No. Federal Lease (State permit 2005-2244)
G.L. Elevation 5913'
K.B. Elevation 5935'



OXY USA INC.

PROPOSED CONFIGURATION

Well Bore Schematic



Well Name **Logan Trail Fed 28-10**
 Diagram Date **23-Apr-09**
 Old CBL TOC 250' Surface Location **1744' FSL & 945' FEL SEC 28 T7S R97W**
 Btm Hole Loc. **1938' FSL & 2010' FEL SEC 28 T7S R97W**
 Field **Wildcat**
 County **Garfield**
 State **Colorado**
 API No. **05-045-10976-00**
 Lease No. **Federal Lease (State permit 2005-2244)**
 G.L. Elevation **5913'**
 K.B. Elevation **5935'**

Conductor	@ 40' GL	16" .250" wall
Cement w/	4 Cu. Ft.	Redimix
Casing	1017'	32 Jts. of 8-5/8", 32#, 8r, J-55, LT&C
Cement w/	185 sxs Lead	Halco Rockies LT Cement w/ 1/8#/sk Polyflake
		12.3#/gal w/ Yield of 2.73
	210 sxs Tail	Halco Rockies HE Cement w/ 1/8#/sk Polyflake
		14.2#/gal & Yield of 1.44
Casing	0- 6154'	147 Jts. 4-1/2" 11.6# 8r I-80 LTC
Cement w/	400 sxs Lead	Halco Type MG 25/75 POZ w/ 8% Gel, 10% Lime, 1/4#/ Polyflake
	670 sxs Tail	Halco Type G 50/50 POZ, w/2% Gel, .6% Halad-23, .3% Halad-322, .3% Versaset, .2% Super CBL

Top of Cement 250' CBL November 28, 2005 (w/1000#)

Marker Joint Tops
 5,118' 21.01
 IBC / CBL to demonstrates cement top above 2000' 4,507' 21.01

PACKER 3380' see tubing detail

UPPER WILLIAMS FORK PERFS

3835 - 3816	3750 - 3645	3745
3735 - 3728	3692 - 3636	
3548 - 3542	3523 - 3516	
3510 - 3501	3496 - 3457	
3446 - 3420		

CIBP w/ 2SX at 4,130
 CIBP w/ 2SX at 4,480

Williams Fork Only Completion
 Perforations 4,540' - 4,916'

PBTD - 6,109'
 FLOAT COL. 6,110'
 SHOE 6,154'
 TD 6,155'

Tree
 Tubing Hanger
 Tubing Head 11" 3m x 7-1/16" 5m
 Casing Head 8-5/8" SOW x 11" 3m, w/ 1 3m LPO Ball Valve. Cameron Wellhead
 Casing Hanger IC-2, 11" x 4-1/2"

FORM

31

Rev 6/99



02062969

State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



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COGCC

UNDERGROUND INJECTION FORMATION PERMIT APPLICATION

1. Submit original and one copy of this form.
2. If data on this form is estimated, indicate as such.
3. Attachments – see checklist and explanation of attachments.
4. Aquifer exemption is required for all injection formations with water quality <10,000 TDS (Rule 322B). Immediately contact the Commission for further requirements if the total dissolved solids (TDS) as determined by water analysis for the injection zone is less than 10,000 ppm.
5. Attach a copy of the certified receipt to each notice to surface and mineral owner(s) or submit a sample copy of the notice and an affidavit of mailing or delivery with names and addresses of those notified. Each person notified shall be specified as either a surface or mineral owner as defined by C.R.S. 34-60-103(7).

Complete the Attachment Checklist

Oper OGCC

Form 31 Original & 1 Copy	✓
Analysis to Injection Zone Water	✓
Analysis of Injection Water	✓
Proposed Injection Program	✓
Resistivity or Induction Log	✓
Cement Bond Log	✓
Surface or Salt Water Displ Agrmt	✓
Notice to Surface/Mineral Owners	✓
Remedial Correction Plan for Wells	
Map Oil/Water Wells w/in 1/4 Mile	✓
List Oil/Gas Wells w/in 1/2 Mile	✓
Map Surface Owners w/in 1/4 Mile	✓
List Surface Owners w/in 1/4 Mile	✓
Map Mineral Owners w/in 1/4 Mile	✓
List Mineral Owners w/in 1/4 Mile	✓
Surface Facility Diagram	✓
Wellbore Diagram	✓
If Commercial Facility, Description of Ops & Area Served	
Unit Area Plat	

Project Name: Logan Trail 28-10 SWD Project Location: NESE, 28, T7S, R97W, 6th PMProject Type: ☐ Enhanced Recovery ☒ Disposal ☐ Simultaneous DisposalSingle or Multiple Well Facility? ☒ Single ☐ Multiple

IF UNIT OPERATIONS, ATTACH PLAT SHOWING UNIT AREA

County: Garfield Field Name and Number: Logan Wash #51250OGCC Operator Number: #66561Name of Operator: OXY USA INC.Address: P.O. Box 4294City: Houston State: TX Zip: 77210Contact Name and Telephone:
Chris ClarkNo: 970-263-3628Fax: 970-263-3694Injection Fluid Type: ☒ Produced Water ☐ Natural Gas ☐ CO₂ ☐ Drilling Fluids
☐ Exempt Gas Plant Waste ☐ Used Workover Fluids ☐ Other Fluids (describe): _____Commercial Facility? ☐ Yes ☒ No

If Yes, describe area of operation and types of fluids to be injected at this facility:

PROPOSED INJECTION FORMATIONS

FORMATION A (Name): WILLIAMS FORK WMEK Porosity: 0.178
 Formation TDS: 13,564 PPM TDS Frac Gradient: 0.69 psi/ft Permeability: 1.0 md
 Proposed Stimulation Program: ☒ Acid ☐ Frac Treatment ☐ None

FORMATION B (Name): _____ Porosity: _____
 Formation TDS: _____ Frac Gradient: _____ psi/ft Permeability: _____
 Proposed Stimulation Program: ☐ Acid ☐ Frac Treatment ☐ None

Anticipated Project Operating Conditions

Under normal operating conditions, estimated fluid injection rates and pressures:

FOR WATER: A minimum of 0 bbls/day @ 0 psi to a maximum of 4,600 bbls/day @ 862 psi.
 FOR GAS: A minimum of _____ mcf/day @ _____ psi to a maximum of _____ bbls/day @ _____ psi.

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Chris Clark

Signed: _____

Title: Regulatory AdvisorDate: 4-24-09OGCC Approved: Denise M. DwyerTitle: UIC Program Administrator 7-17-08

Order No: _____

UIC FACILITY NO: 159,275

CONDITIONS OF APPROVAL, IF ANY:

Onyskiw, Denise

From: Chris_Clark@oxy.com
Sent: Thursday, July 16, 2009 8:51 AM
To: Onyskiw, Denise
Subject: FW: Requested Plats for the LT 28-10 SWD well
Attachments: Logan_Wash_28-9_Temp_Facilities Figure 2.pdf; Logan_Wash_Site_1 (4).pdf; Logan Trail 28-9 AB.pdf

Chris Clark
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
970-263-3628 Office
970-462-1206 Cell
chris.clark@oxy.com

From: Clark, Chris G
Sent: Thursday, July 16, 2009 8:50 AM
To: 'dennise.onyskiw@state.co.us'
Cc: 'Dillon,David'
Subject: Requested Plats for the LT 28-10 SWD well

Dennise, please find the attached surface facility plats for the Logan Trail 28-10 injection well. Please note that we have filed with the BLM for a temporary facility (90-120) days while we construct our pipeline, and the permanent facilities. I have attached plats for each. After we finish with the temporary facilities we will be going to a remote pumping and offloading facility. There will be no additional equipment on the pad other than what is shown in the as-built also attached.

Please feel free to call me if you have any questions or require any additional information.

Thanks,
Chris

Chris Clark
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
970-263-3628 Office
970-462-1206 Cell
chris.clark@oxy.com

EXHIBIT "A"



Graphic Scale in Feet
1" = 80'

 **GEO SURV**

LAND SURVEYING AND MAPPING
520 STACY COURT SUITE "B"
LAFAYETTE, CO. 80026
Ph 303 666 0379 Fx 303 665 6320

OXY USA, INC
LOGAN WASH FEDERAL 28-9 PAD

NE1/4 SE1/4 SEC 28 T7S R97W
6th PM GARFIELD COUNTY COLORADO

VEGETATION:
SAGEBRUSH
GRASSES



NW1/4 SE1/4 SEC 31 T7S R97W
6th PM GARFIELD COUNTY COLORADO

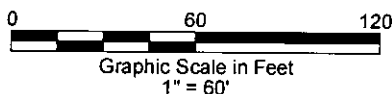
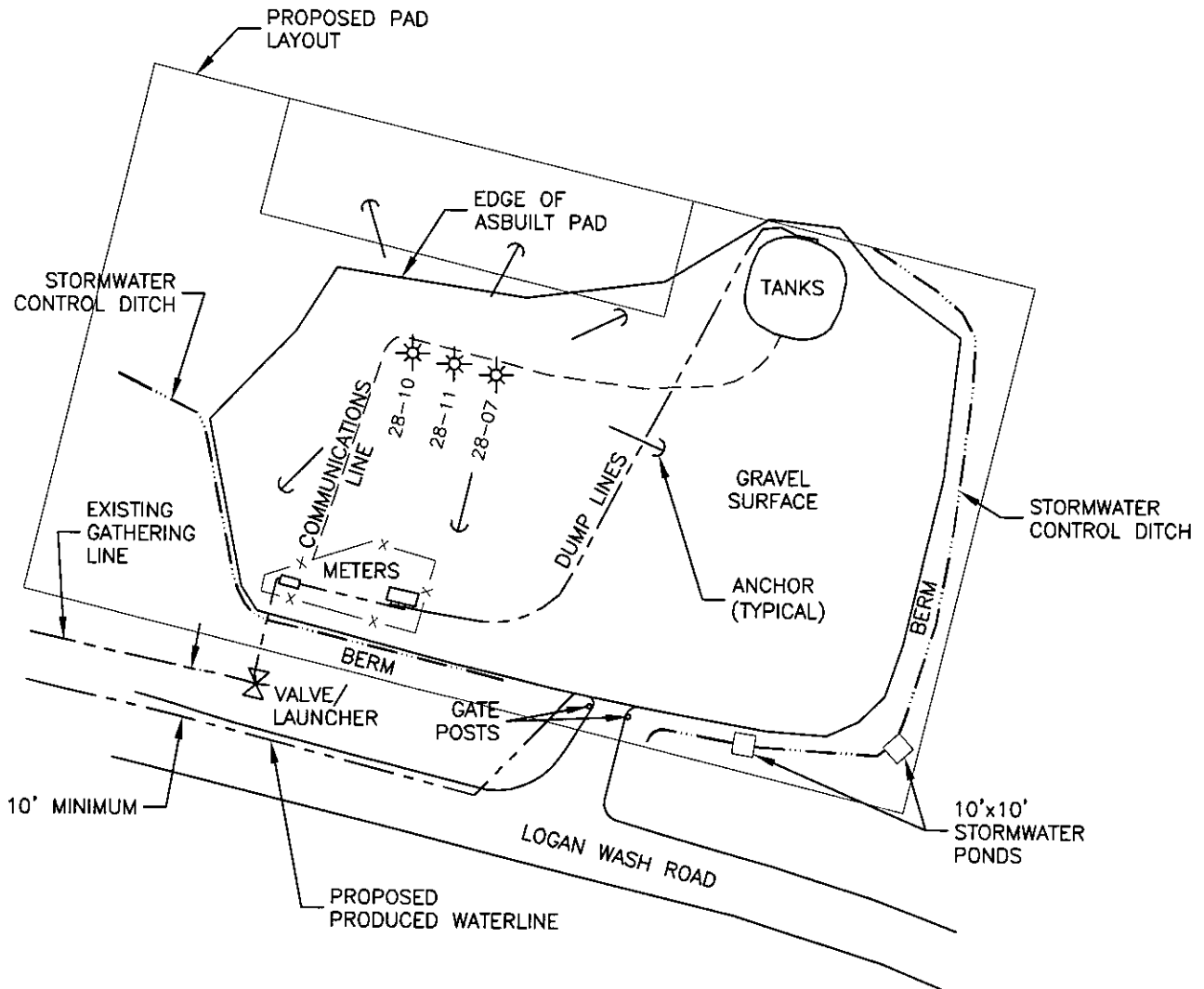


EXHIBIT "A"

LOGAN TRAIL 28-9 PAD ASBUILT



SHEET 1 OF 1

5/18/09

GEO SURV
 LAND SURVEYING AND MAPPING
 520 STACY COURT SUITE "B"
 LAFAYETTE, CO. 80026
 Ph 303 666 0379 Fx 303 665 6320

OXY USA, INC
LOGAN TRAIL FEDERAL 28-9 PAD

NE1/4 SE1/4 SEC 28 T7S R97W
6th PM GARFIELD COUNTY COLORADO

List of all Oil and Gas wells within ½ mile of proposed injection well Logan Trail Federal 28-10

API Number	Well Name	Owner	Formation	Status
05-045-10973	Logan Trail Federal 28-7	OXY USA Inc.	WMFK, ILES	WO
05-045-10976	Logan Trail Federal 28-10	OXY USA Inc.	WMFK, ILES	SI
05-045-10975	Logan Trail Federal 28-11	OXY USA Inc.	WMFK, ILES	PR

**List of all Surface Owners within ¼ mile of proposed injection well Logan Trail
Federal 28-10**

Bureau of Land Management
2815 H Road
Grand Junction, CO 81506

Shell Frontier Oil and Gas Inc.
C/o Shell Oil Company
PO Box 4854
Houston, TX 77010

**List of all Mineral Owners within ¼ mile of proposed injection well Logan Trail
Federal 28-10**

Bureau of Land Management
2815 H Road
Grand Junction, CO 81506

Puckett Land Company
5460 S. Quebec St., Ste. 250
Greenwood Village, CO 80111-1917

Shell Frontier Oil and Gas Inc.
C/o Shell Oil Company
PO Box 4854
Houston, TX 77010



OXY USA Inc.
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

April 7, 2009

Bureau of Land Management
2815 H Road
Grand Junction, CO 81506

RE: Surface Owner Notice of OXY's Proposed Logan Trail Federal 28-10 Injection Well Application; NESE, Section 28, Township 7 South, Range 97 West, 6th P.M. Garfield County, Colorado

Dear Surface Owner:

OXY USA Inc. (OXY) proposes to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for its existing Logan Trail Federal 28-10 well. In accordance with COGCC rule (325.i), OXY is providing this notice letter to the Bureau of Land Management which has been identified as a surface owner within ¼ mile of the proposed injection well (see attached surface owner map). OXY's proposed Logan Trail Federal 28-10 Injection Well will be a dedicated injection well targeting the Williams Fork formation for disposal of produced water. OXY proposes to begin injection activities mid-summer 2009.

As described in COGCC rule 325.i, any person who would be directly and adversely affected or aggrieved by the authorization of the underground disposal into the proposed injection zone may file, within fifteen (15) days of notification, a written request for a public hearing before the Commission, provided such request meets the protest requirements specified in subparagraph m. of Rule 325. Written protest shall specifically provide information on (1) possible conflicts between the injection zone's proposed disposal use and present or future use as a source of drinking water or present or future use as a source of hydrocarbons, or (2) operations at the well site which may affect potential and current sources of drinking water.

Please let the Commission or OXY know if you have any questions, comments, or if you require additional information regarding the proposed injection well. The COGCC can be reached at (303) 894-2100. OXY can be reached at (970) 263-3628 or via email at chris_clark@oxy.com.

Sincerely,
OXY USA Inc.



Chris Clark
Regulatory Coordinator

Enclosure: Surface Owner Map



OXY USA Inc.
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

April 7, 2009

Shell Frontier Oil and Gas Inc.
C/o Shell Oil Company
PO Box 4854
Houston, TX 77010
Attention: Keith Etzel

RE: Surface Owner Notice of OXY's Proposed Logan Trail Federal 28-10 Injection Well Application; NESE, Section 28, Township 7 South, Range 97 West, 6th P.M. Garfield County, Colorado

Dear Surface Owner:

OXY USA Inc. (OXY) proposes to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for its existing Logan Trail Federal 28-10 well. In accordance with COGCC rule (325.i), OXY is providing this notice letter to Shell, Inc. which has been identified as a surface owner within ¼ mile of the proposed injection well (see attached surface owner map). OXY's proposed Logan Trail Federal 28-10 Injection Well will be a dedicated injection well targeting the Williams Fork formation for disposal of produced water. OXY proposes to begin injection activities mid-summer 2009.

As described in COGCC rule 325.I, any person who would be directly and adversely affected or aggrieved by the authorization of the underground disposal into the proposed injection zone may file, within fifteen (15) days of notification, a written request for a public hearing before the Commission, provided such request meets the protest requirements specified in subparagraph m. of Rule 325. Written protest shall specifically provide information on (1) possible conflicts between the injection zone's proposed disposal use and present or future use as a source of drinking water or present or future use as a source of hydrocarbons, or (2) operations at the well site which may affect potential and current sources of drinking water.

Please let the Commission or OXY know if you have any questions, comments, or if you require additional information regarding the proposed injection well. The COGCC can be reached at (303) 894-2100. OXY can be reached at (970) 263-3628 or via email at chris_clark@oxy.com.

Sincerely,
OXY USA Inc.


Chris Clark
Regulatory Coordinator

Enclosure: Surface Owner Map



OXY USA Inc.
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

April 7, 2009

Shell Frontier Oil and Gas Inc.
C/o Shell Oil Company
PO Box 4854
Houston, TX 77010
Attention: Keith Etzel

**RE: Mineral Owner Notice of OXY's Proposed Logan Trail Federal 28-10 Injection Well Application; NESE, Section 28, T7S, R97W, 6th PM.
Garfield County, Colorado**

Dear Mineral Owner:

OXY USA Inc. (OXY) proposes to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for its existing Logan Trail Federal 28-10 well. In accordance with COGCC rule (325.i), OXY is providing this notice letter to Shell which has been identified as a mineral owner within ¼ mile of the proposed injection well (see attached mineral owner map). OXY's proposed Logan Trail Federal 28-10 Injection Well will be a dedicated injection well targeting the Williams Fork formation for disposal of produced water. OXY proposes to begin injection activities mid-summer 2009.

As described in COGCC rule 325.I, any person who would be directly and adversely affected or aggrieved by the authorization of the underground disposal into the proposed injection zone may file, within fifteen (15) days of notification, a written request for a public hearing before the Commission, provided such request meets the protest requirements specified in subparagraph m. of Rule 325. Written protest shall specifically provide information on (1) possible conflicts between the injection zone's proposed disposal use and present or future use as a source of drinking water or present or future use as a source of hydrocarbons, or (2) operations at the well site which may affect potential and current sources of drinking water.

Please let the Commission or OXY know if you have any questions, comments, or if you require additional information regarding the proposed injection well. The COGCC can be reached at (303) 894-2100. OXY can be reached at (970) 263-3628 or via email at chris_clark@oxy.com.

Sincerely,
OXY USA Inc.

Chris Clark
Regulatory Coordinator

Enclosure: Mineral Owner Map



OXY USA Inc.
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

April 7, 2009

Bureau of Land Management
2815 H Road
Grand Junction, CO 81506

**RE: Mineral Owner Notice of OXY's Proposed Logan Trail Federal 28-10 Injection Well
Application; NESE, Section 28, T7S, R97W, 6th PM.
Garfield County, Colorado**

Dear Mineral Owner:

OXY USA Inc. (OXY) proposes to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for its existing Logan Trail Federal 28-10 well. In accordance with COGCC rule (325.i), OXY is providing this notice letter to the Bureau of Land Management which has been identified as a mineral owner within $\frac{1}{4}$ mile of the proposed injection well (see attached mineral owner map). OXY's proposed Logan Trail Federal 28-10 Injection Well will be a dedicated injection well targeting the Williams Fork formation for disposal of produced water. OXY proposes to begin injection activities mid-summer 2009.

As described in COGCC rule 325.i, any person who would be directly and adversely affected or aggrieved by the authorization of the underground disposal into the proposed injection zone may file, within fifteen (15) days of notification, a written request for a public hearing before the Commission, provided such request meets the protest requirements specified in subparagraph m. of Rule 325. Written protest shall specifically provide information on (1) possible conflicts between the injection zone's proposed disposal use and present or future use as a source of drinking water or present or future use as a source of hydrocarbons, or (2) operations at the well site which may affect potential and current sources of drinking water.

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Sincerely,
OXY USA Inc.



Chris Clark
Regulatory Coordinator

Enclosure: Mineral Owner Map



OXY USA Inc.
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

April 7, 2009

Puckett Land Company
5460 S. Quebec St., Ste 250
Greenwood Village, CO 80111-1917
Attention: Ray Anderson

**RE: Mineral Owner Notice of OXY's Proposed Logan Trail Federal 28-10 Injection Well Application; NESE, Section 28, T7S, R97W, 6th PM.
Garfield County, Colorado**

Dear Mineral Owner:

OXY USA Inc. (OXY) proposes to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for its existing Logan Trail Federal 28-10 well. In accordance with COGCC rule (325.i), OXY is providing this notice letter to Puckett Land Company which has been identified as a mineral owner within ¼ mile of the proposed injection well (see attached mineral owner map). OXY's proposed Logan Trail Federal 28-10 Injection Well will be a dedicated injection well targeting the Williams Fork formation for disposal of produced water. OXY proposes to begin injection activities mid-summer 2009.

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Sincerely,
OXY USA Inc.

A large, stylized handwritten signature in black ink, appearing to read "Chris Clark", is written over the typed name and title.
Chris Clark
Regulatory Coordinator

Enclosure: Mineral Owner Map



OXY USA Inc.
A subsidiary of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

April 20, 2009

Puckett Investment Company
5460 S. Quebec St., Ste 250
Greenwood Village, CO 80111-1917
Attention: Jeffrey Puckett

**RE: Mineral Owner Notice of OXY's Proposed Logan Trail Federal 28-10 Injection Well Application; NESE, Section 28, T7S, R97W, 6th PM.
Garfield County, Colorado**

Dear Mineral Owner:

OXY USA Inc. (OXY) proposes to submit an injection well application to the Colorado Oil and Gas Conservation Commission (COGCC) for its existing Logan Trail Federal 28-10 well. In accordance with COGCC rule (325.i), OXY is providing this notice letter to Puckett Land Company which has been identified as a mineral owner within ¼ mile of the proposed injection well (see attached mineral owner map). OXY's proposed Logan Trail Federal 28-10 Injection Well will be a dedicated injection well targeting the Williams Fork formation for disposal of produced water. OXY proposes to begin injection activities mid-summer 2009.

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Sincerely,
OXY USA Inc.



Chris Clark
Regulatory Coordinator

Enclosure: Mineral Owner Map

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Shell Frontier Oil & Gas Inc.
% Shell Oil Company
Attn: Keith Etzel
PO Box 4854
Houston TX 77010

2. Article Number

(Transfer from service label)

7006 2150 0001 6759 1664

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

x B. Small

☐ Agent☐ Addressee

B. Received by (Printed Name)

BARNETT SMALL

C. Date of Delivery

4-13-09

- D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Shell Frontier Oil & Gas Inc.
% Shell Oil Company
Attn: Keith Etzel
PO Box 4854
Houston TX 77010

2. Article Number

(Transfer from service label)

7006 2150 0001 6759 1657

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

x B. Small

☐ Agent☐ Addressee

B. Received by (Printed Name)

BARNETT SMALL

C. Date of Delivery

4-13-09

- D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

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- Print your name and address on the reverse so that we can return the card to you.
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1. Article Addressed to:

Bureau of Land Management
Attn: Bob Hartman
2815 H Road
Grand Junction Co
81506

2. Article Number

(Transfer from service label)

7006 2150 0001 6759 1640

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

x Jim Brown

☐ Agent☐ Addressee

B. Received by (Printed Name)

JIM BROWN

C. Date of Delivery

4-9-09

- D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

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- Print your name and address on the reverse so that we can return the card to you.
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1. Article Addressed to:

Bureau of Land Management
Attn: Bob Hartman
2815 H Road
Grand Junction CO
81506

2. Article Number

(Transfer from service label)

7006 2150 0001 6759 1671

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Jim Brown

☐ Agent
☐ Addressee

B. Received by (Printed Name)

JIM BROWN

C. Date of Delivery

4-9-09

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

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1. Article Addressed to:

Puckett Land Company
Attn: Ray Anderson
5460 S. Quebec St 250
Greenwood Village CO
80111-1917

2. Article Number

(Transfer from service label)

7006 2150 0001 6759 1688

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X J. Anderson

☒ Agent
☐ Addressee

B. Received by (Printed Name)

J. Anderson

C. Date of Delivery

4-13

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Puckett Investment Co
Attn: Jeffrey Puckett
5460 S. Quebec St #250
Greenwood Village CO
80111-1917

2. Article Number

(Transfer from service label)

7006 2150 0001 6759 1695

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X J. Puckett

☐ Agent
☐ Addressee

B. Received by (Printed Name)

J. Puckett

C. Date of Delivery

4/22/09

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

Logan Trail Injection Program

Produced water from all OXY wells in the Cascade Creek Field shall be commingled and disposed of in the Logan Trail 28-10 well. Produced water shall be injected into the upper Williams Fork formation above the top of commercial gas. The injection pressure shall not exceed the frac gradient of the target formation. The frac gradient has been determined to be 0.69 psi/ft based on several step rate tests and measured ISIP's following each test. Although the well appears to be capable of accepting water below the frac gradient at rates up to 3.2 BPM or 4,600 BWPD it is anticipated that normal operations shall consist of injecting 1,800 to 2,000 BWPD.

Initial transport of the water shall be by truck from the gathering site and hauled to tanks at the Logan Trail 28-10 well site.

OXY intends to install a gathering system to pipe water from wells and centralized storage pits to the Logan Trail 28-10 well. Pipeline construction is projected to occur in the summer of 2010 after permits and rights of way have been obtained from the appropriate parties.

COMPANY LARAMIE ENERGY LLC

WELL LOGAN TRAIL FEDERAL 28-10

FIELD WILDCAT

COUNTY GARFIELD STATE CO

Permanent Datum GROUND LEVEL Elev 59' 0"

Log measured from K B 23 ft above perm datum

Drilling measured from KELLY BUSHING

Date 09/25/2005

Run No ONE

Depth - Driller 6' 57"

Depth - Logger 6' 24"

Bottom - Logged Interval 6' 14"

Top - Logged Interval CASING

Casing - Driller 8' 625" @ 10' 7"

Casing - Logger 10' 7"

Bit Size 7 875"

Type Fluid in Hole LSND

Dens | Visc 9.4 | 55

Ph | Fluid Loss 9.4 | 6.8

Source of Sample MUD TANK

Rm @ Meas Temp 2.58 @ 72 F

Rmf @ Meas Temp 2.22 @ 73 F

Rmc @ Meas Temp 2.78 @ 72 F

Source Rmf | Rmc CALC | CALC

Rm @ BHT 1.21 @ 161 F

Rmf @ BHT 1.06 @ 161 F

Rmc @ BHT 1.31 @ 161 F

Time Since Circ 5.75 HOURS

Time on Bottom 0245 09/25

Max Rec Temp 16 F @ T O

Equip | Location 45674 | G J

Recorded By M MAZUREK

Witnessed By S CLAUSSEN

COMPANY LARAMIE ENERGY LLC

WELL LOGAN TRAIL FEDERAL 28-10

FIELD WILDCAT

COUNTY GARFIELD STATE CO

API No 050451097600

Location SURFACE 1009' FEL
742' FSL 1989' FEL

Other Services SD/DSN

Section 28 TWP 07S Rge 97W

Elev K B 5933'

D.F. 5932'

Q.L. 59' 0"

HALLIBURTON

01263445

045-10976

HIGH RESOLUTION
INDUCTION
JAN 17 05

Service Ticket No		3958077		API Serial No		050451097600		PGM Version		XL v5.6					
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLES						RESISTIVITY SCALE CHANGES									
Date Sample No.						Type Log		Depth		Scale Up Hole		Scale Down Hole			
Depth - Driller															
Type Fluid															
in Hole															
Dens Visc															
Ph Fluid Loss															
Source of Sample						RESISTIVITY EQUIPMENT DATA									
Rm @ Meas Temp		2.58 @ 72 F		@		Run No		Tool Type & No		Pad Type		Tool Pos		Other	
Rmf @ Meas Temp		2.22 @ 73 F		@		ONE		HRIIDE AB180		N/A		1.5" SO		N/A	
Rmc @ Meas Temp		2.78 @ 72 F		@											
Source Rmf Rmc		CALC CALC													
Rm @ BHT		1.21 @ 161 F		@											
Rmf @ BHT		1.06 @ 161 F		@											
Rmc @ BHT		1.31 @ 161 F		@											
EQUIPMENT DATA															
GAMMA				ACOUSTIC				DENSITY				NEUTRON			
Run No		ONE		Run No				Run No		ONE		Run No		ONE	
Serial No		034		Serial No				Serial No		I09P69_2		Serial No		A064_2	
Model No		D4TG_X		Model No				Model No		SDL_DC		Model No		DSN_II	
Diameter		3.625"		No. of Cent				Diameter		3.625"		Diameter		3.625"	
Detector Model No		102A		Spacing				Log Type		GAM-GAM		Log Type		THERMAL	
Type		SCINT						Source Type		CS137		Source Type		AM241BE	
Length		8"		1 SA IV / NI		NO		Serial No		3026 GW		Serial No		DSN-80	

TRM	HRIDE	TEMPERATURE OF MUD	72.	DEGF
RRMIN	HRIDE	MINIMUM RESISTIVITY FOR MAP?	0.2	OHMM
RRMAX	HRIDE	MAXIMUM RESISTIVITY FOR MAP?	200.	OHMM
RHOFLU	SHARED	FLUID DENSITY	1.	Grams/CC
XPHLOC	XP_RWA	CROSSPLOT SELECTION FOR XPOR	XPLT	
ARCHA	XP_RWA	ARCHIE A	0.62	
ARCHM	XP_RWA	ARCHIE M	2.15	
FSEL	XP_RWA	POROSITY SELECTION FOR F (RWA)	DEN	
D4IN	D4TG_X	USE D4TG FOR INCLINATION?	NO	
GR_OK	GR_D4X	DO GAMMA CALCULATIONS?	YES	Inches
GRSO	GR_D4X	GAMMA RAY STANDOFF	0.	
SDL_OK	SDL_DC	DO SDL CALCULATIONS?	YES	
EVR_OK	SDL_DC	DO SDL EVR CALCULATIONS?	YES	
AIR	SDL_DC	AIR FILLED BOREHOLE?	NO	
LOGB	SDL_DC	LOGGING CAL BLOCKS?	NO	
SDLTC	SDL_DC	SDL TEMPERATURE CORRECTION?	YES	
MUDT	SDL_DC	MUD CORRECTION TYPE?	NONE	
RHOMAT	SDL_DC	MATRIX DENSITY	2.68	Grams/CC
CAL_OK	CAL_DC	DO CALIPER CALCULATIONS?	YES	
AHVOK	CAL_DC	DO ANNULAR VOLUME CALCULATION?	YES	

MAIN PASS 2" = 100'

Version No: 5.6 | hc:3.0

Date File: lar_111_28_10.5.cla

Format File: HR12IN.apc

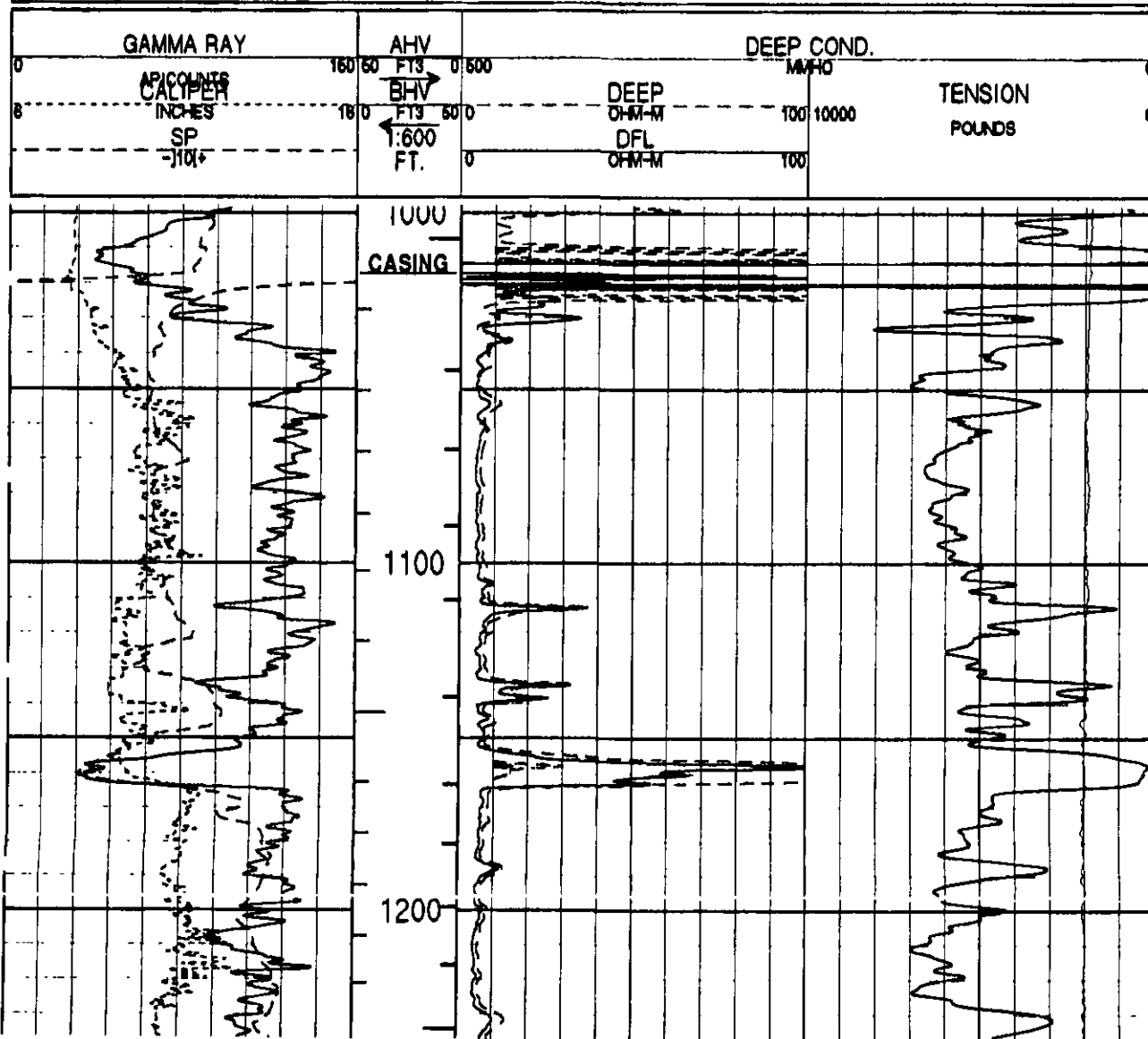
Plot Time: 2005-09-26 04:56:31

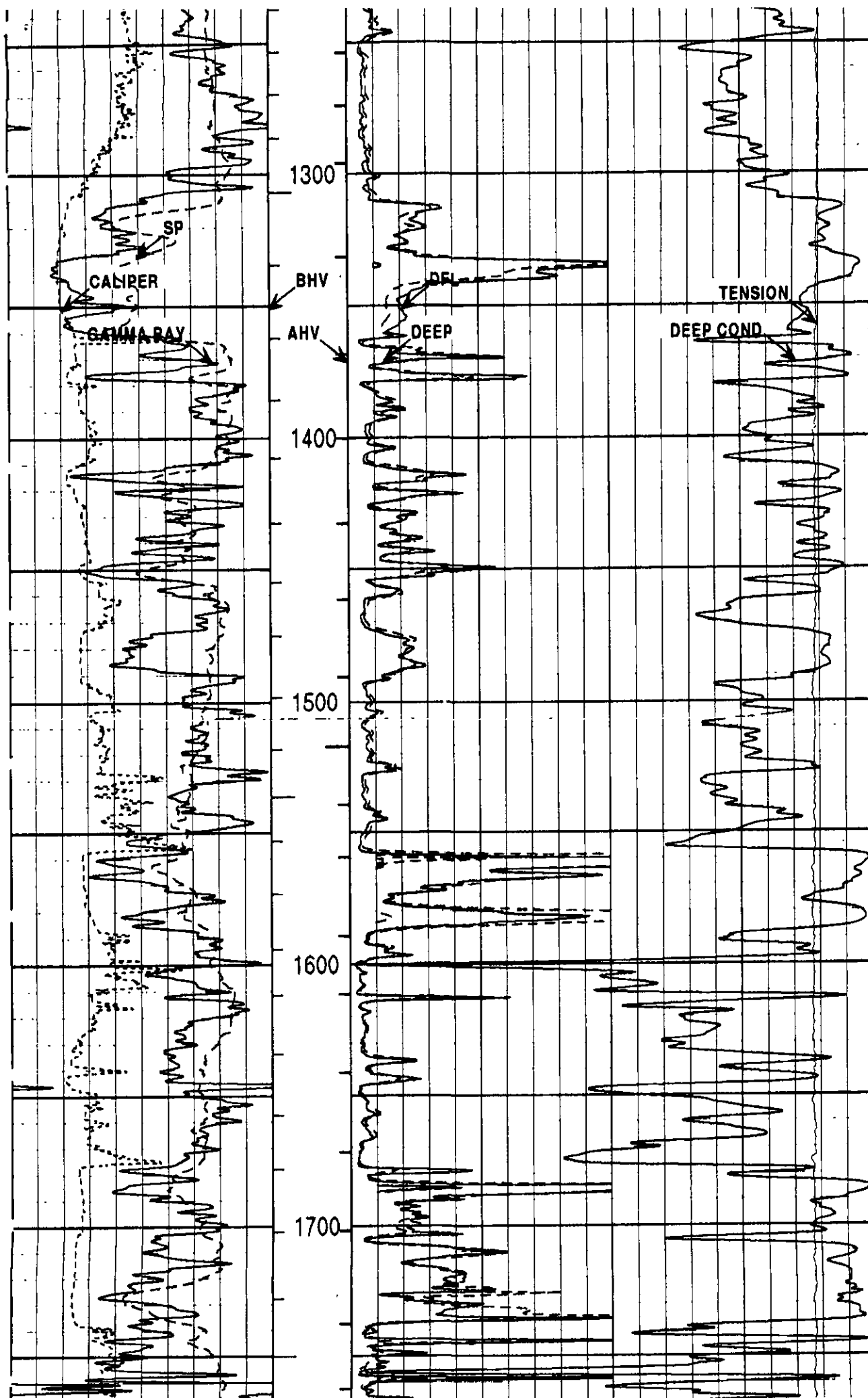
Log Time: 2005-09-26 02:53:35

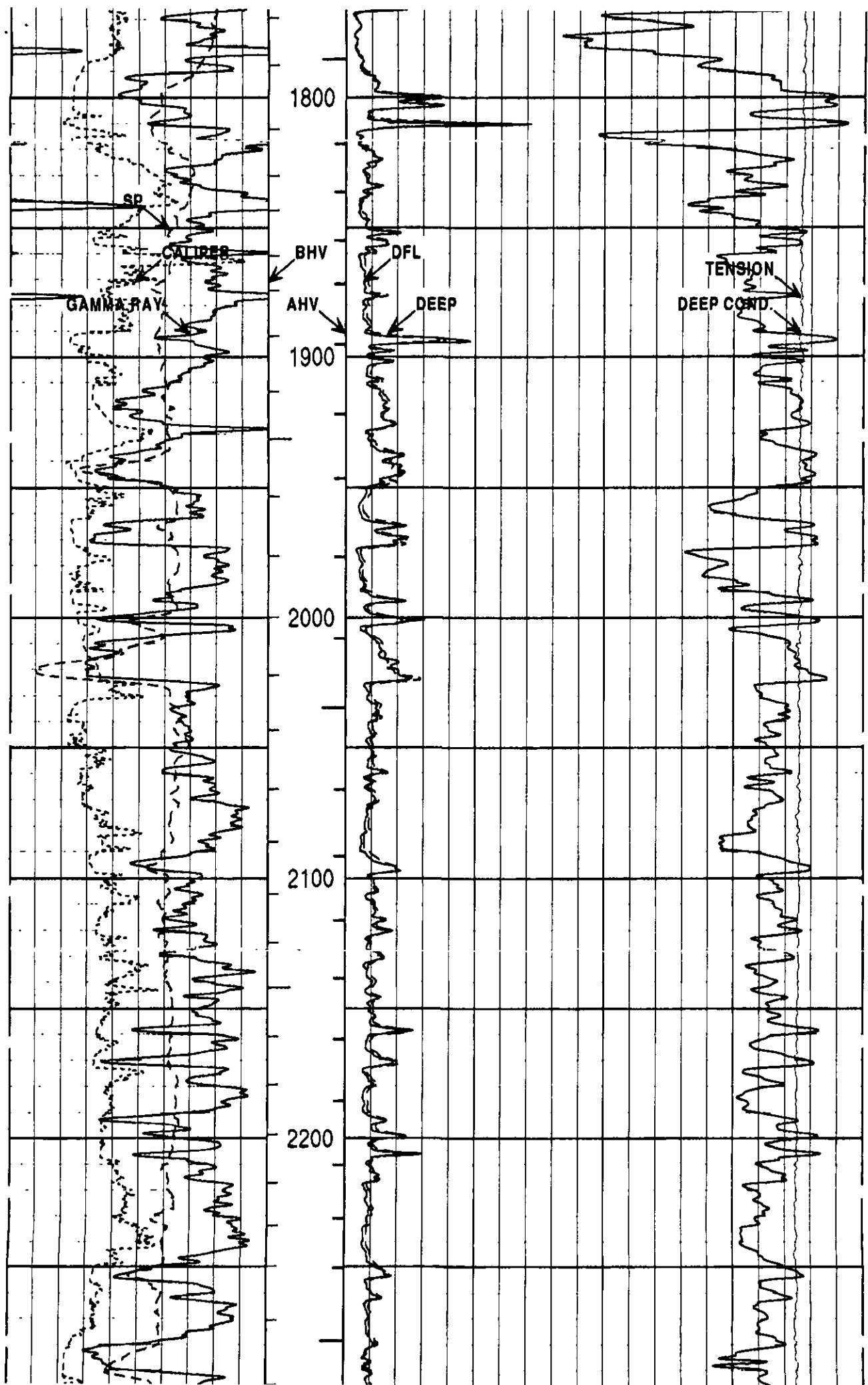
HALLIBURTON

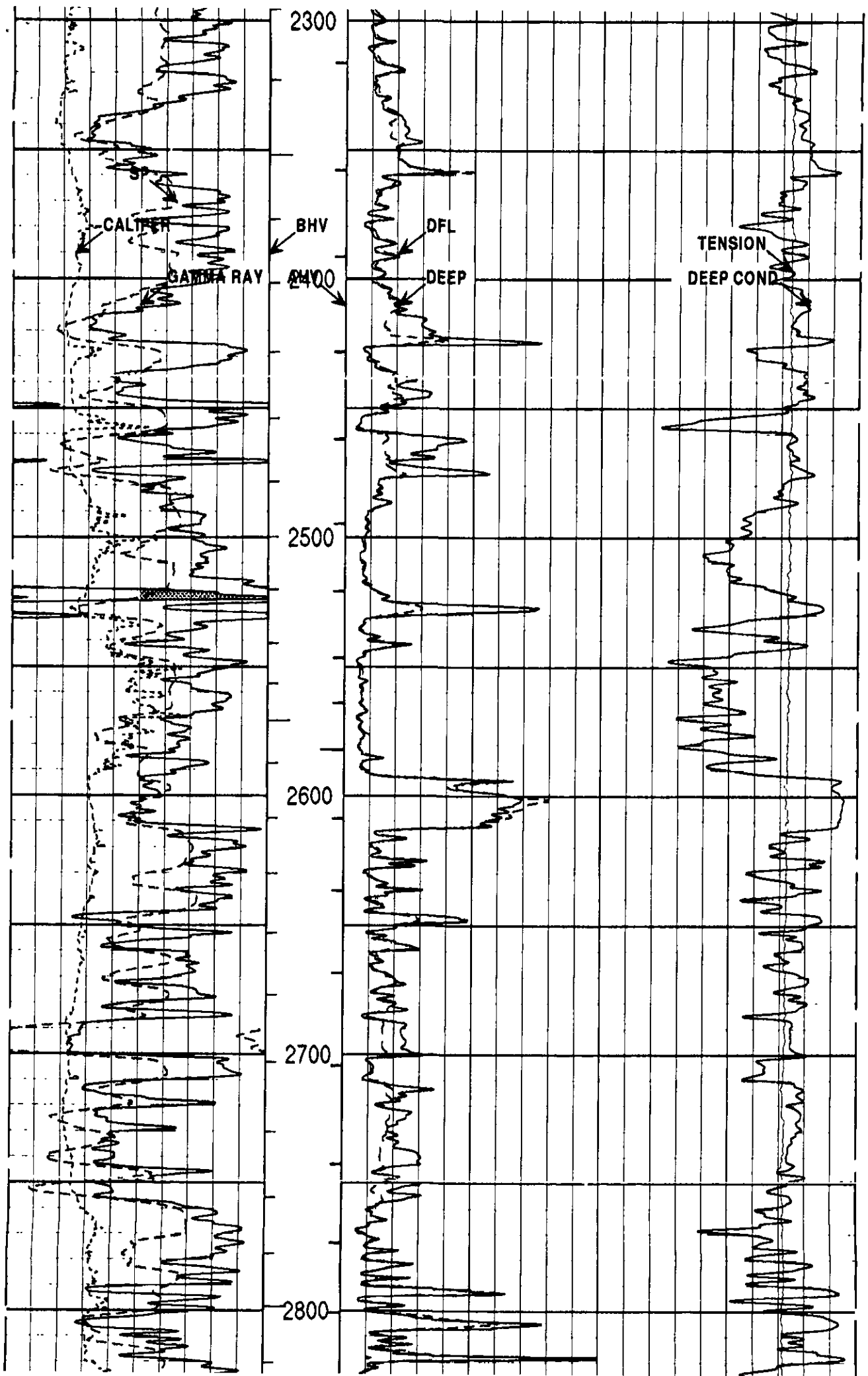
Top Depth: 997.00

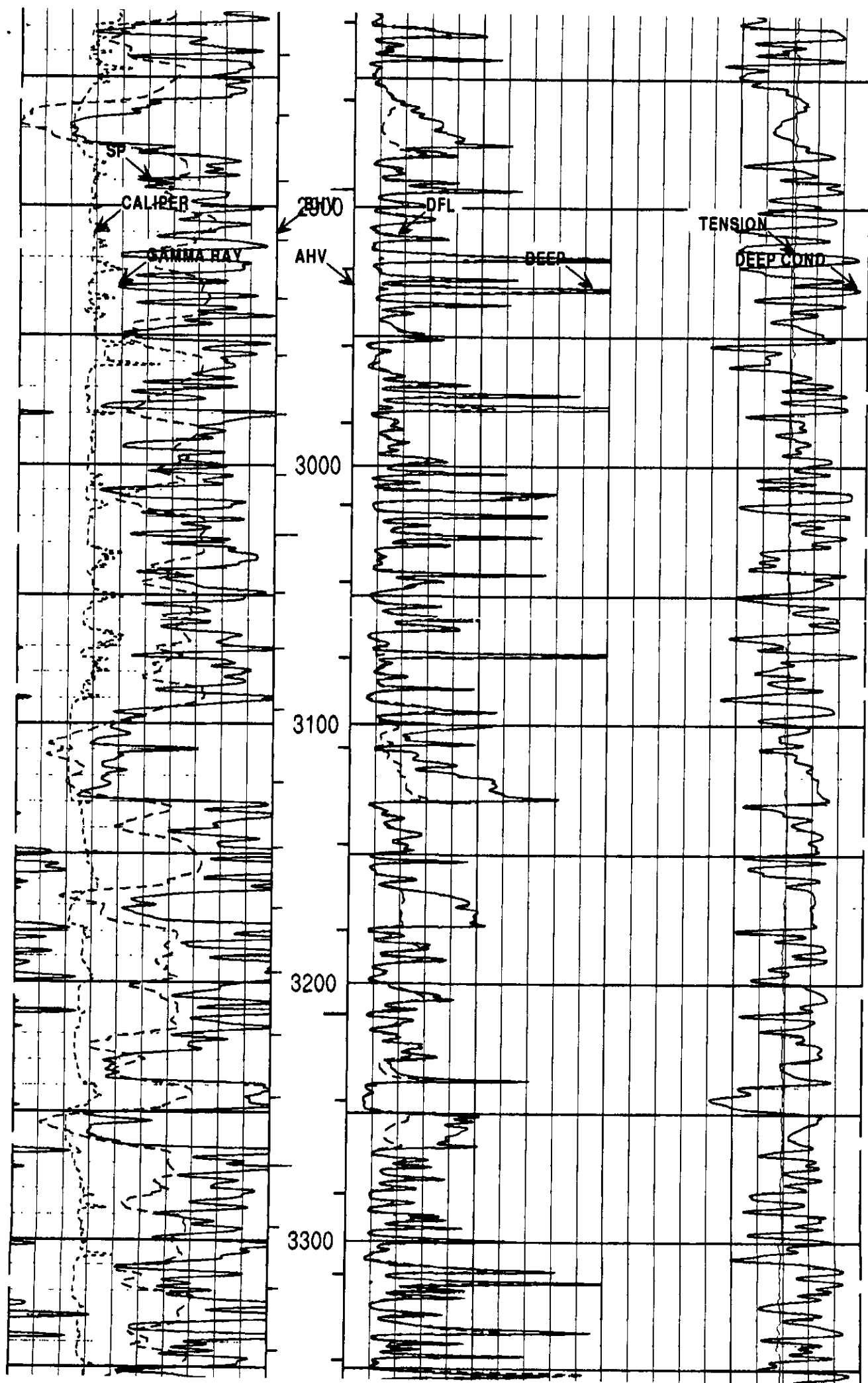
Bottom Depth: 6139.51

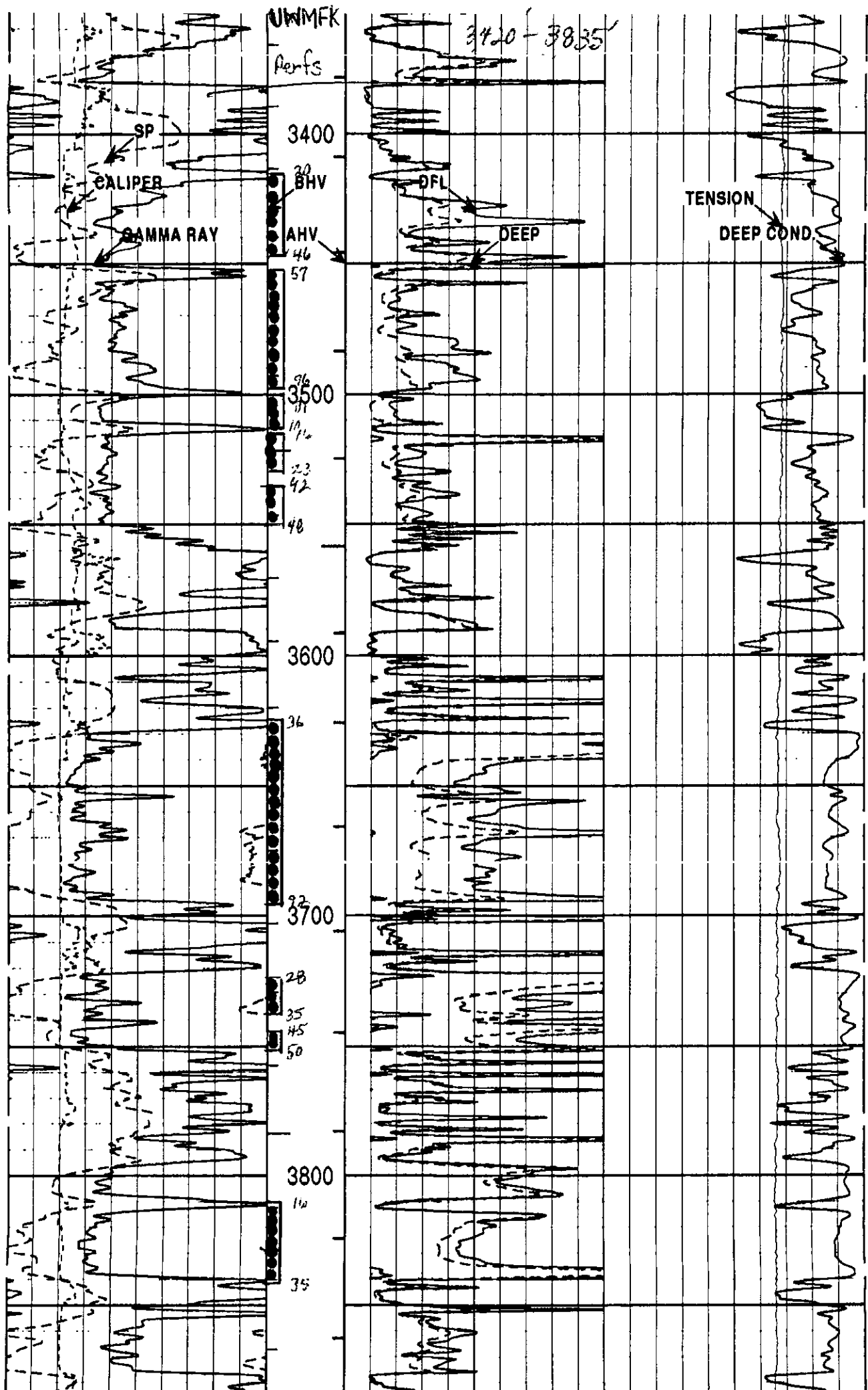


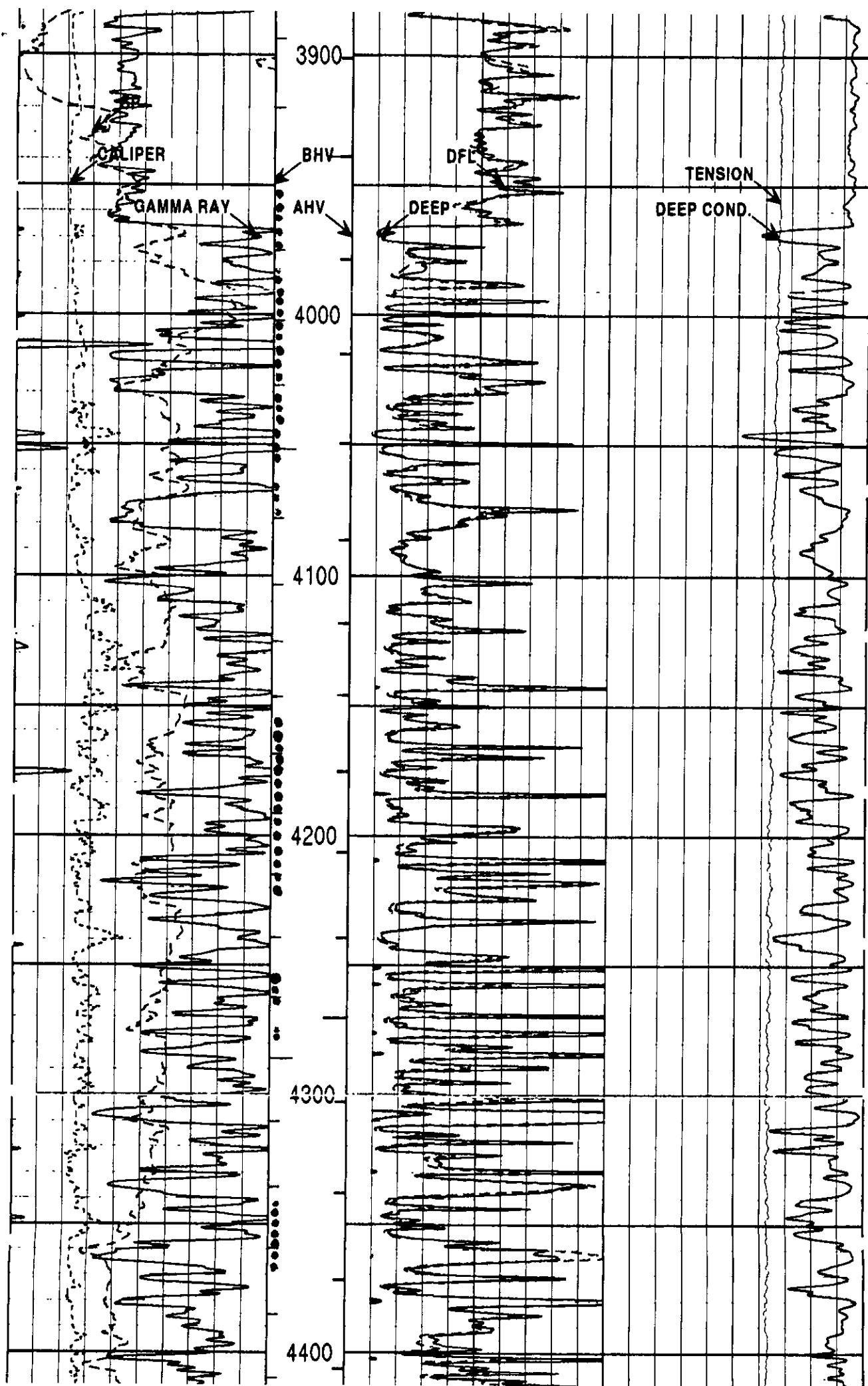


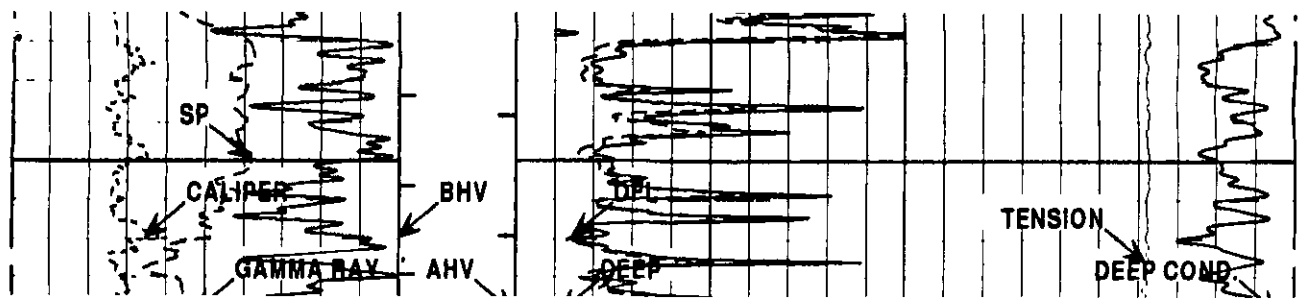












Adkins, James J

From: Andrews, David [David.Andrews@state.co.us]
Sent: Thursday, April 16, 2009 2:59 PM
To: Adkins, James J
Cc: Adam, Steve W.; Weaver, Douglas; Marcano, Robert
Subject: RE: cement map

Jaime,

The cement bond looks acceptable for isolation of the proposed injection zone. Please proceed with your injection test procedure, which I approved on 1/12/2009 (Sundry Notice, COGCC Document No. 2036993).

Thanks,

David D. Andrews, P.E., P.G.
Engineering Supervisor - Northwest Area

State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203
Office Phone: (303) 894-2100 Ext. 5145
Cell Phone: (970) 456-5262
Fax: (303) 894-2109
E-mail: David.Andrews@state.co.us
Website: <http://www.colorado.gov/cogcc>

From: James_Adkins@oxy.com [mailto:James_Adkins@oxy.com]
Sent: Thursday, April 16, 2009 2:42 PM
To: Andrews, David
Cc: Steve_Adam@oxy.com; Douglas_Weaver@oxy.com; Robert_Marcano@oxy.com
Subject: cement map

Hi Dave!

Hope your trip back went well.

Attached is the cement map IBC/Isolation Scanner on the Logan Trail 28-10.

You will need the Schlumberger .pds viewer to look at it. I think you may have it but if not let me know and I will send it to you.

I also have it in .pdf but it is 32 MB.

If you are available I would really like to discuss asap since we have a rig and service companies waiting on orders.

04/23/2009

Thanks! *Jaime*

Jaime Adkins
Sr. Operations Engineer
OXY USA Inc.
760 Horizon Drive, Suite 101
Grand Junction, CO 81506

970.263.3623 Direct
970.462.1205 Cell
e-mail: James_Adkins@oxy.com

Depth	N-phi	D-phi	Porosity
3420	0.2075	0.144	0.087875
3420.5	0.1968	0.1437	0.085125
3421	0.1874	0.1546	0.0855
3421.5	0.1809	0.1674	0.087075
3422	0.1821	0.1773	0.08985
3422.5	0.1866	0.1775	0.091025
3423	0.183	0.1662	0.0873
3423.5	0.171	0.1453	0.079075
3424	0.1603	0.1242	0.071125
3424.5	0.1522	0.1179	0.067525
3425	0.1465	0.1236	0.067525
3425.5	0.1451	0.1267	0.06795
3426	0.1445	0.1265	0.06775
3426.5	0.1436	0.1321	0.068925
3427	0.142	0.1437	0.071425
3427.5	0.1394	0.1544	0.07345
3428	0.1389	0.1636	0.075625
3428.5	0.1403	0.1677	0.077
3429	0.1419	0.1709	0.0782
3429.5	0.1433	0.1676	0.077725
3430	0.143	0.1568	0.07495
3430.5	0.1407	0.1455	0.07155
3431	0.1412	0.1419	0.070775
3431.5	0.1447	0.1425	0.0718
3432	0.1411	0.1447	0.07145
3432.5	0.13	0.1393	0.067325
3433	0.121	0.142	0.06575
3433.5	0.1154	0.1475	0.065725
3434	0.1121	0.1512	0.065825
3434.5	0.1136	0.1509	0.066125
3435	0.1156	0.1495	0.066275
3435.5	0.1149	0.1492	0.066025
3436	0.1148	0.1433	0.064525
3436.5	0.1157	0.1315	0.0618
3437	0.1149	0.1241	0.05975
3437.5	0.1139	0.1262	0.060025
3438	0.1166	0.1301	0.061675
3438.5	0.1217	0.1295	0.0628
3439	0.1284	0.1292	0.0644
3439.5	0.1369	0.1405	0.06935
3440	0.1422	0.1598	0.0755
3440.5	0.1431	0.1774	0.080125
3441	0.1399	0.1823	0.08055
3441.5	0.135	0.1793	0.078575
3442	0.1339	0.1651	0.07475
3442.5	0.1368	0.1485	0.071325

Depth	N-phi	D-phi	Porosity
3443	0.1371	0.1357	0.0682
3443.5	0.1315	0.1231	0.06365
3444	0.126	0.1151	0.060275
3444.5	0.1239	0.1135	0.05935
3445	0.1235	0.1246	0.062025
3445.5	0.1233	0.1333	0.06415
3446	0.1185	0.1344	0.063225
3446.5	0.108	0.1239	0.057975
3447	0.0988	0.1085	0.051825
3447.5	0.0971	0.098	0.048775
3448	0.1022	0.0997	0.050475
3448.5	0.1061	0.1102	0.054075
3449	0.1069	0.1172	0.056025
3449.5	0.106	0.1117	0.054425
3450	0.0998	0.1014	0.0503
3450.5	0.0928	0.098	0.0477
3451	0.0974	0.1021	0.049875
3451.5	0.1186	0.0979	0.054125
3454.5	0.2415	0.034	0.068875
3455	0.2535	0.035	0.072125
3455.5	0.2325	0.0444	0.069225
3456	0.1872	0.0535	0.060175
3456.5	0.145	0.0617	0.051675
3457	0.1259	0.0763	0.05055
3457.5	0.1305	0.1011	0.0579
3458	0.1496	0.1311	0.070175
3458.5	0.1645	0.1534	0.079475
3459	0.1627	0.1606	0.080825
3459.5	0.1502	0.1409	0.072775
3460	0.1436	0.116	0.0649
3460.5	0.1526	0.116	0.06715
3461	0.173	0.1421	0.078775
3461.5	0.1921	0.1719	0.091
3462	0.2014	0.186	0.09685
3462.5	0.2033	0.1887	0.098
3463	0.2025	0.1916	0.098525
3463.5	0.1996	0.1994	0.09975
3464	0.1948	0.2021	0.099225
3464.5	0.1883	0.1897	0.0945
3465	0.178	0.1622	0.08505
3465.5	0.1666	0.1456	0.07805
3466	0.1618	0.1489	0.077675
3466.5	0.1634	0.1524	0.07895
3467	0.1677	0.1506	0.079575
3467.5	0.1705	0.1504	0.080225
3468	0.1612	0.1528	0.0785

Depth	N-phi	D-phi	Porosity
3468.5	0.1368	0.1433	0.070025
3469	0.1113	0.1161	0.05685
3469.5	0.1009	0.0936	0.048625
3470	0.1126	0.0955	0.052025
3470.5	0.1388	0.1249	0.065925
3471	0.1614	0.1562	0.0794
3471.5	0.173	0.1726	0.0864
3472	0.1772	0.176	0.0883
3472.5	0.1776	0.1813	0.089725
3473	0.1798	0.189	0.0922
3473.5	0.1858	0.1917	0.094375
3474	0.1942	0.1873	0.095375
3474.5	0.2025	0.1896	0.098025
3475	0.204	0.1959	0.099975
3475.5	0.201	0.1965	0.099375
3476	0.1976	0.1867	0.096075
3476.5	0.1889	0.1766	0.091375
3477	0.1784	0.1717	0.087525
3477.5	0.1704	0.1657	0.084025
3478	0.163	0.1573	0.080075
3478.5	0.158	0.1537	0.077925
3479	0.1559	0.1528	0.077175
3479.5	0.1574	0.154	0.07785
3480	0.1594	0.1544	0.07845
3480.5	0.1573	0.1545	0.07795
3481	0.155	0.1511	0.076525
3481.5	0.156	0.1509	0.076725
3482	0.1568	0.1511	0.076975
3482.5	0.152	0.1496	0.0754
3483	0.1393	0.1394	0.069675
3483.5	0.1243	0.1166	0.060225
3484	0.1163	0.0958	0.053025
3484.5	0.1203	0.0858	0.051525
3485	0.133	0.0922	0.0563
3485.5	0.1471	0.1108	0.064475
3486	0.1604	0.1359	0.074075
3486.5	0.1685	0.1578	0.081575
3487	0.168	0.1639	0.082975
3487.5	0.1657	0.1565	0.08055
3488	0.1671	0.1458	0.078225
3488.5	0.1713	0.1392	0.077625
3489	0.1767	0.1368	0.078375
3489.5	0.1786	0.1396	0.07955
3490	0.174	0.1416	0.0789
3490.5	0.1705	0.1389	0.07735
3491	0.1725	0.1388	0.077825

Depth	N-phi	D-phi	Porosity
3491.5	0.1715	0.1449	0.0791
3492	0.1689	0.1541	0.08075
3492.5	0.1712	0.1586	0.08245
3493	0.1726	0.162	0.08365
3493.5	0.1703	0.1608	0.082775
3494	0.1668	0.154	0.0802
3494.5	0.1625	0.1444	0.076725
3495	0.1612	0.1344	0.0739
3495.5	0.1692	0.1342	0.07585
3496	0.1785	0.1462	0.081175
3496.5	0.1772	0.1497	0.081725
3500	0.2472	0.1096	0.0892
3500.5	0.2377	0.1239	0.0904
3501	0.2214	0.139	0.0901
3501.5	0.2095	0.166	0.093875
3502	0.2067	0.1929	0.0999
3502.5	0.2104	0.2041	0.103625
3503	0.2155	0.2028	0.104575
3503.5	0.2208	0.2	0.1052
3504	0.2261	0.2068	0.108225
3504.5	0.2251	0.2165	0.1104
3505	0.2152	0.2132	0.1071
3505.5	0.2043	0.1939	0.09955
3506	0.1987	0.1763	0.09375
3506.5	0.1984	0.1722	0.09265
3507	0.2025	0.1789	0.09535
3507.5	0.2084	0.187	0.09885
3508	0.2125	0.1984	0.102725
3508.5	0.2133	0.2111	0.1061
3509	0.2102	0.2157	0.106475
3509.5	0.2029	0.1997	0.10065
3510	0.1889	0.1719	0.0902
3510.5	0.1751	0.1431	0.07955
3511	0.1801	0.1314	0.077875
3511.5	0.2152	0.128	0.0858
3512	0.2646	0.1165	0.095275
3512.5	0.2958	0.1021	0.099475
3513	0.3047	0.102	0.101675
3513.5	0.2993	0.0991	0.0996
3517.5	0.086	0.1021	0.047025
3518	0.1092	0.1303	0.059875
3518.5	0.1313	0.1505	0.07045
3519	0.1463	0.1623	0.07715
3519.5	0.152	0.1635	0.078875
3520	0.1519	0.1557	0.0769
3520.5	0.1517	0.1609	0.07815

Depth	N-phi	D-phi	Porosity
3521	0.156	0.1823	0.084575
3521.5	0.1629	0.2017	0.09115
3522	0.1669	0.207	0.093475
3522.5	0.164	0.1921	0.089025
3523	0.1528	0.1621	0.078725
3523.5	0.136	0.1273	0.065825
3524	0.126	0.1166	0.06065
3524.5	0.136	0.1385	0.068625
3525	0.1576	0.1732	0.0827
3525.5	0.1721	0.1928	0.091225
3526	0.1771	0.1933	0.0926
3526.5	0.179	0.1845	0.090875
3527	0.1779	0.1746	0.088125
3527.5	0.1719	0.1668	0.084675
3528	0.1638	0.1625	0.081575
3528.5	0.1581	0.1633	0.08035
3529	0.1513	0.1684	0.079925
3529.5	0.1424	0.1672	0.0774
3530	0.1329	0.1542	0.071775
3530.5	0.1273	0.1416	0.067225
3531	0.1359	0.1445	0.0701
3531.5	0.1498	0.1537	0.075875
3532	0.1538	0.1564	0.07755
3532.5	0.1486	0.1511	0.074925
3533	0.1342	0.1413	0.068875
3533.5	0.1179	0.1236	0.060375
3534	0.1116	0.1112	0.0557
3534.5	0.1138	0.1088	0.05565
3535	0.1179	0.1086	0.056625
3535.5	0.1197	0.1066	0.056575
3536	0.119	0.1105	0.057375
3536.5	0.1169	0.1157	0.05815
3537	0.1146	0.1238	0.0596
3537.5	0.1142	0.1265	0.060175
3538	0.1144	0.1331	0.061875
3538.5	0.1138	0.1387	0.063125
3539	0.1146	0.1378	0.0631
3539.5	0.1173	0.1295	0.0617
3540	0.1191	0.1172	0.059075
3540.5	0.1219	0.1154	0.059325
3541	0.128	0.1265	0.063625
3541.5	0.1355	0.1448	0.070075
3542	0.1418	0.1625	0.076075
3542.5	0.1443	0.1656	0.077475
3543	0.1431	0.1616	0.076175
3543.5	0.1392	0.1507	0.072475

Depth	N-phi	D-phi	Porosity
3544	0.136	0.1456	0.0704
3544.5	0.1366	0.144	0.07015
3545	0.1358	0.1368	0.06815
3545.5	0.1315	0.1326	0.066025
3546	0.1318	0.1322	0.066
3546.5	0.1408	0.1367	0.069375
3547	0.1526	0.1414	0.0735
3547.5	0.16	0.1539	0.078475
3548	0.1582	0.1646	0.0807
3548.5	0.1442	0.1588	0.07575
3549	0.1239	0.1415	0.06635
3549.5	0.108	0.1234	0.05785
3550	0.1064	0.1174	0.05595
3550.5	0.1189	0.1193	0.05955
3551	0.1335	0.1214	0.063725
3551.5	0.1321	0.1043	0.0591
3552	0.11	0.0785	0.047125
3552.5	0.09	0.0615	0.037875
3553	0.0947	0.0612	0.038975
3553.5	0.1193	0.0661	0.04635
3554	0.1388	0.07	0.0522
3554.5	0.1425	0.0759	0.0546
3555	0.1439	0.0821	0.0565
3555.5	0.1579	0.0801	0.0595
3556	0.1838	0.0769	0.065175
3556.5	0.1948	0.0722	0.06675
3557	0.1777	0.068	0.061425
3557.5	0.161	0.0578	0.0547
3558	0.1672	0.0554	0.05565
3558.5	0.1849	0.0552	0.060025
3559	0.1966	0.049	0.0614
3559.5	0.2094	0.0393	0.062175
3628.5	0.2648	0.1072	0.093
3629	0.2034	0.0877	0.072775
3629.5	0.15	0.0891	0.059775
3630	0.1218	0.1057	0.056875
3630.5	0.1131	0.1234	0.059125
3631	0.113	0.133	0.0615
3631.5	0.1135	0.1329	0.0616
3632	0.1123	0.1281	0.0601
3632.5	0.1075	0.1182	0.056425
3633	0.1022	0.1026	0.0512
3633.5	0.0994	0.0809	0.045075
3634	0.0988	0.0687	0.041875
3634.5	0.1013	0.0763	0.0444
3635	0.1053	0.0984	0.050925

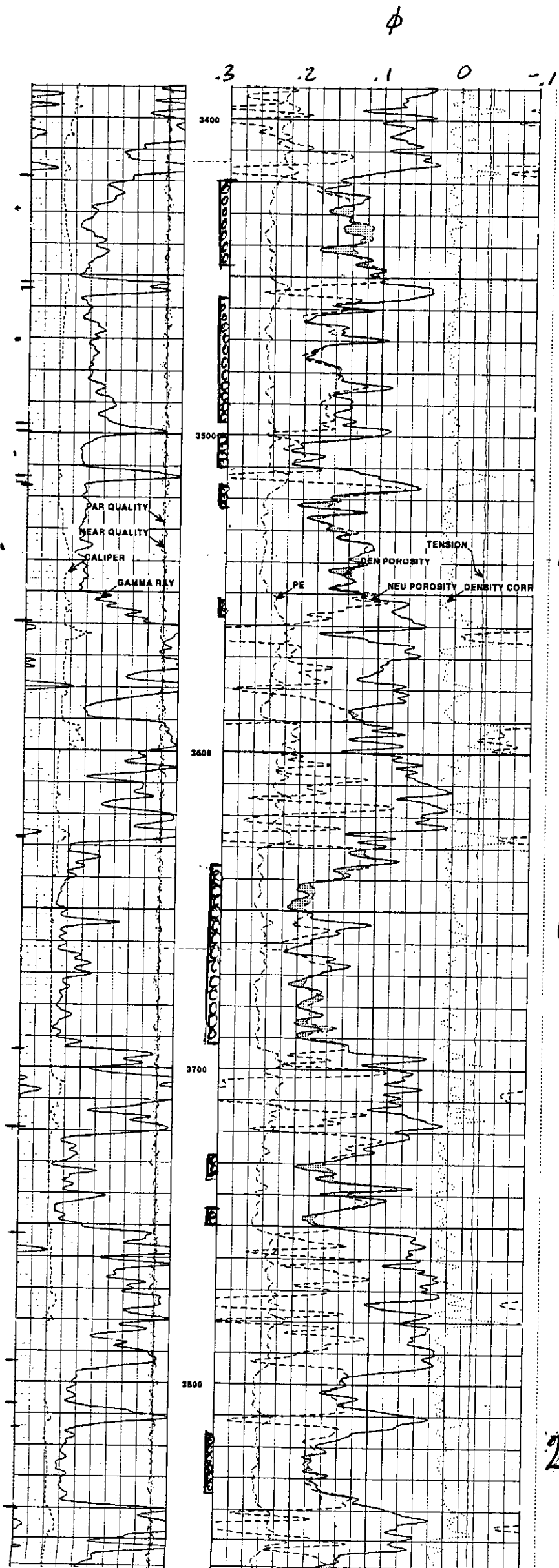
Depth	N-phi	D-phi	Porosity
3635.5	0.1083	0.1221	0.0576
3636	0.113	0.1394	0.0631
3636.5	0.1235	0.1504	0.068475
3637	0.1359	0.1545	0.0726
3637.5	0.1405	0.1487	0.0723
3638	0.1361	0.1437	0.06995
3638.5	0.1306	0.1406	0.0678
3639	0.1319	0.1421	0.0685
3639.5	0.1437	0.143	0.071675
3640	0.1615	0.1517	0.0783
3640.5	0.1748	0.1654	0.08505
3641	0.181	0.1842	0.0913
3641.5	0.1839	0.1964	0.095075
3642	0.1831	0.1973	0.0951
3642.5	0.1796	0.199	0.09465
3643	0.1778	0.2005	0.094575
3643.5	0.1766	0.1996	0.09405
3644	0.177	0.1923	0.092325
3644.5	0.179	0.1868	0.09145
3645	0.1805	0.186	0.091625
3645.5	0.1815	0.1899	0.09285
3646	0.1814	0.1985	0.094975
3646.5	0.1814	0.2054	0.0967
3647	0.1829	0.2078	0.097675
3647.5	0.1865	0.2076	0.098525
3648	0.1904	0.2099	0.100075
3648.5	0.1921	0.2131	0.1013
3649	0.1919	0.2123	0.10105
3649.5	0.1899	0.2042	0.098525
3650	0.1878	0.1919	0.094925
3650.5	0.1866	0.1821	0.092175
3651	0.1868	0.1792	0.0915
3651.5	0.1893	0.1819	0.0928
3652	0.1947	0.1821	0.0942
3652.5	0.2022	0.1744	0.09415
3653	0.2039	0.1516	0.088875
3653.5	0.2009	0.1228	0.080925
3654	0.2054	0.1042	0.0774
3654.5	0.2048	0.1093	0.078525
3655	0.1838	0.1266	0.0776
3655.5	0.162	0.1427	0.076175
3656	0.1576	0.1496	0.0768
3656.5	0.1637	0.1472	0.077725
3657	0.1725	0.1462	0.079675
3657.5	0.1833	0.1505	0.08345
3658	0.1924	0.1664	0.0897

Depth	N-phi	D-phi	Porosity
3658.5	0.1989	0.1767	0.0939
3659	0.2081	0.1827	0.0977
3659.5	0.2168	0.1815	0.099575
3660	0.217	0.1831	0.100025
3660.5	0.2141	0.1909	0.10125
3661	0.2135	0.1986	0.103025
3661.5	0.2133	0.2054	0.104675
3662	0.2137	0.2114	0.106275
3662.5	0.2127	0.2165	0.1073
3663	0.2091	0.2141	0.1058
3663.5	0.2018	0.1956	0.09935
3664	0.192	0.1683	0.090075
3664.5	0.1861	0.1502	0.084075
3665	0.185	0.152	0.08425
3665.5	0.1837	0.1614	0.086275
3666	0.1776	0.1554	0.08325
3666.5	0.1657	0.1409	0.07665
3667	0.1569	0.1296	0.071625
3667.5	0.155	0.1345	0.072375
3668	0.1554	0.1453	0.075175
3668.5	0.1607	0.1558	0.079125
3669	0.1676	0.1639	0.082875
3669.5	0.1709	0.1692	0.085025
3670	0.176	0.175	0.08775
3670.5	0.181	0.1823	0.090825
3671	0.1846	0.1904	0.09375
3671.5	0.1876	0.1945	0.095525
3672	0.1881	0.2018	0.097475
3672.5	0.1899	0.2096	0.099875
3673	0.1916	0.2103	0.100475
3673.5	0.1883	0.2009	0.0973
3674	0.185	0.1877	0.093175
3674.5	0.1833	0.1762	0.089875
3675	0.1791	0.1684	0.086875
3675.5	0.175	0.1674	0.0856
3676	0.1716	0.1717	0.085825
3676.5	0.1664	0.1744	0.0852
3677	0.1635	0.1776	0.085275
3677.5	0.1662	0.1827	0.087225
3678	0.1714	0.1897	0.090275
3678.5	0.1757	0.194	0.092425
3679	0.1803	0.1951	0.09385
3679.5	0.185	0.1987	0.095925
3680	0.1855	0.1974	0.095725
3680.5	0.1834	0.1927	0.094025
3681	0.1821	0.1857	0.09195

Depth	N-phi	D-phi	Porosity
3681.5	0.1819	0.1772	0.089775
3682	0.1827	0.1697	0.0881
3682.5	0.1823	0.1642	0.086625
3683	0.1808	0.1688	0.0874
3683.5	0.1815	0.1838	0.091325
3684	0.1839	0.1955	0.09485
3684.5	0.1864	0.1994	0.09645
3685	0.1865	0.202	0.097125
3685.5	0.1788	0.1972	0.094
3686	0.1643	0.1931	0.08935
3686.5	0.1507	0.1751	0.08145
3687	0.1468	0.166	0.0782
3687.5	0.1572	0.1716	0.0822
3688	0.1726	0.189	0.0904
3688.5	0.1817	0.1962	0.094475
3689	0.1841	0.198	0.095525
3689.5	0.1841	0.1973	0.09535
3690	0.1814	0.1935	0.093725
3690.5	0.1717	0.1847	0.0891
3691	0.1577	0.1713	0.08225
3691.5	0.1466	0.1511	0.074425
3692	0.1398	0.1351	0.068725
3692.5	0.137	0.1308	0.06695
3693	0.1345	0.1318	0.066575
3693.5	0.1354	0.1311	0.066625
3694	0.1468	0.1312	0.0695
3694.5	0.1714	0.1282	0.0749
3719.5	0.2421	0.0691	0.0778
3720	0.2047	0.0616	0.066575
3720.5	0.1615	0.0546	0.054025
3721	0.1245	0.0509	0.04385
3721.5	0.1033	0.0507	0.0385
3722	0.0918	0.0548	0.03665
3722.5	0.0864	0.0641	0.037625
3723	0.0906	0.0777	0.042075
3723.5	0.1047	0.0864	0.047775
3724	0.1218	0.096	0.05445
3724.5	0.1316	0.1049	0.059125
3725	0.1325	0.1099	0.0606
3725.5	0.127	0.1068	0.05845
3726	0.1198	0.0953	0.053775
3726.5	0.1215	0.0964	0.054475
3727	0.1327	0.1132	0.061475
3727.5	0.1441	0.1271	0.0678
3728	0.1501	0.1355	0.0714
3728.5	0.153	0.1416	0.07365

Depth	N-phi	D-phi	Porosity
3729	0.1571	0.1523	0.07735
3729.5	0.1614	0.167	0.0821
3730	0.1617	0.1821	0.08595
3730.5	0.1592	0.1954	0.08865
3731	0.1577	0.1978	0.088875
3731.5	0.1559	0.1896	0.086375
3732	0.151	0.1766	0.0819
3732.5	0.1457	0.1613	0.07675
3733	0.1464	0.1451	0.072875
3733.5	0.1501	0.149	0.074775
3734	0.1491	0.1632	0.078075
3734.5	0.1474	0.172	0.07985
3735	0.1488	0.1688	0.0794
3735.5	0.1458	0.1582	0.076
3736	0.1308	0.1401	0.067725
3736.5	0.1039	0.1126	0.054125
3737	0.0779	0.0804	0.039575
3737.5	0.0656	0.0496	0.0288
3738	0.0699	0.0474	0.029325
3738.5	0.0889	0.0818	0.042675
3739	0.1131	0.1342	0.061825
3739.5	0.1296	0.1656	0.0738
3740	0.1321	0.1522	0.071075
3740.5	0.1266	0.1153	0.060475
3741	0.1194	0.0867	0.051525
3741.5	0.1102	0.0785	0.047175
3742	0.1035	0.0857	0.0473
3742.5	0.1062	0.0922	0.0496
3743	0.1145	0.1023	0.0542
3743.5	0.1221	0.1149	0.05925
3744	0.1309	0.1301	0.06525
3744.5	0.14	0.1397	0.069925
3745	0.15	0.1511	0.075275
3745.5	0.1614	0.1599	0.080325
3746	0.1682	0.1726	0.0852
3746.5	0.1705	0.1828	0.088325
3747	0.1719	0.188	0.089975
3747.5	0.1722	0.1884	0.09015
3748	0.1724	0.1825	0.088725
3748.5	0.1734	0.18	0.08835
3749	0.1701	0.1773	0.08685
3749.5	0.1613	0.1727	0.0835
3750	0.1545	0.1553	0.07745
3750.5	0.1521	0.1374	0.072375
3751	0.1569	0.1212	0.069525
3751.5	0.1743	0.1035	0.06945

Depth	N-phi	D-phi	Porosity
3752	0.2001	0.0754	0.068875
3752.5	0.2211	0.0528	0.068475
3814	0.137	0.0737	0.052675
3814.5	0.1383	0.0919	0.05755
3815	0.1418	0.1135	0.063825
3815.5	0.1445	0.1212	0.066425
3816	0.1469	0.1223	0.0673
3816.5	0.1517	0.1264	0.069525
3817	0.1622	0.1327	0.073725
3817.5	0.1755	0.1379	0.07835
3818	0.1825	0.1434	0.081475
3818.5	0.1807	0.1547	0.08385
3819	0.1757	0.1637	0.08485
3819.5	0.1726	0.1661	0.084675
3820	0.1705	0.163	0.083375
3820.5	0.1679	0.1585	0.0816
3821	0.168	0.1535	0.080375
3821.5	0.17	0.1523	0.080575
3822	0.1714	0.1628	0.08355
3822.5	0.1729	0.1772	0.087525
3823	0.173	0.1839	0.089225
3823.5	0.172	0.1774	0.08735
3824	0.1744	0.1719	0.086575
3824.5	0.1794	0.1737	0.088275
3825	0.1817	0.1759	0.0894
3825.5	0.1819	0.1766	0.089625
3826	0.1804	0.176	0.0891
3826.5	0.1749	0.1759	0.0877
3827	0.1703	0.1793	0.0874
3827.5	0.1703	0.1835	0.08845
3828	0.1667	0.1758	0.085625
3828.5	0.1622	0.161	0.0808
3829	0.1654	0.1496	0.07875
3829.5	0.1706	0.1549	0.081375
3830	0.1745	0.1681	0.08565
3830.5	0.1781	0.1733	0.08785
3831	0.1805	0.1713	0.08795
3831.5	0.1784	0.1676	0.0865
3832	0.1723	0.1628	0.083775
3832.5	0.1708	0.1656	0.0841
3833	0.1719	0.1628	0.083675
3833.5	0.1677	0.161	0.082175
3834	0.1598	0.159	0.0797
3834.5	0.1504	0.1541	0.076125
3835	0.1373	0.1444	0.070425
			Total bbl
			38.658 37687306



$$34' \times 0.15 = 5.1$$

$$40 \times 0.16 = 6.4$$

$$12 \times 0.2 = 2.4$$

$$16 \times 0.16 = 2.56$$

~~44~~

$$30 \times 0.14 = 4.2$$

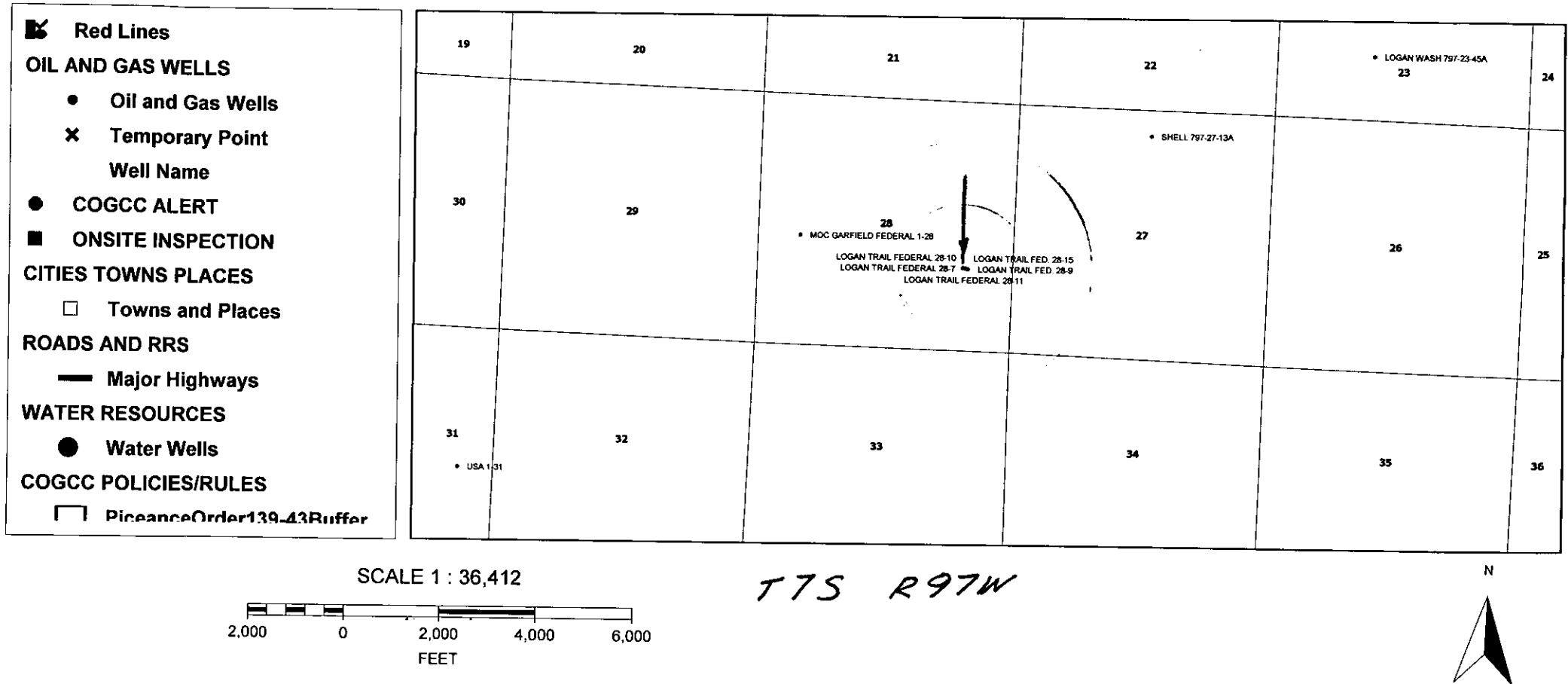
$$66 \times 0.17 = 11.88$$

$$32 \times 0.19 = 4.48$$

$$26 \times 0.14 = 3.64$$

$$40.66$$

COGCC GIS Online



COGIS - WELL Information

Scout Card



Related



Insp.



MIT



GIS



Doc



Wellbore



Order

Surface Location Data for API # 05-045-10976

Status: S

Well Name/No: LOGAN TRAIL FEDERAL #28-10 (click well name for production)

Operator: OXY USA INC - 66561

Status Date: 6/15/2006

Federal or State Lease #: COC 67547

County: GARFIELD #045

Location: NESE 28 7S 1

Field: WILDCAT - #99999

Elevation: 5,913 ft.

Planned Location 1742 FSL 1009 FEL

Lat/Long: 39.414229/-108.218669 Lat/Long Calculated

Wellbore Data for Sidetrack #00

Status: SI 6/15

Spud Date: 9/15/2005

Spud Date is: ACTUAL

Wellbore Permit

DIRECTIONAL

Permit #: 20052244

Expiration Date: 7/26/2006

Prop Depth/Form: 6039

Surface Mineral Owner Same: Y

Mineral Owner: FEDERAL

Surface Owner: FEDERAL

Unit:

Unit Number:

Formation and Spacing: Code: ILES , Formation: ILES , Order: , Unit Acreage: , Drill Unit:

Formation and Spacing: Code: WMFK , Formation: WILLIAMS FORK , Order: , Unit Acreage: , Drill Unit:

Wellbore Completed

Completion Date: 9/26/2005

Measured TD: 6155

Measured PB depth: 6109

True Vertical TD: 6003

True Vertical PB depth: 5957

Top PZ Location: Sec: 28 Twp: 7S 97W

Footage: 1987 FSL 1970 FEL Depth

Bottom PZ Location: Sec: Twp:

Footages: 1991 FSL 1989 FEL Depth

Bottom Hole Location: Sec: 28 Twp: 7S 97W

Footages: 1987 FSL 1970 FEL Depth

Log Types: HIGH RESOLUTION INDUCTION; SPECTRAL DENSITY DUAL SPACED NEUTRON,

Casing: String Type: SURF , Hole Size: 12.25, Size: 8.625, Top: 0, Depth: 1017, Weight: 32

Cement: Sacks: 395, Top: 0, Bottom: 1017, Method Grade: CALC

Casing: String Type: 1ST , Hole Size: 7.875, Size: 4.5, Top: 0, Depth: 6154, Weight: 11.6

Cement: Sacks: 1070, Top: 1000, Bottom: 6154, Method Grade: CBL

Formation	Log Top	Log Bottom
WILLIAMS FORK	2590	
CAMEO	4970	
ROLLINS	5354	
COZZETTE	5570	
CORCORAN	5810	

Completed information for formation WMFK

1st Production Date: N/A

Choke Size: 20.000

Status Date: 6/15/2006

Hole Completion: N

Commingle: N

Production Method: FLOWING

Formation Name: WILLIAMS FORK

Status: SI

Formation Treatment: 140,000 # 20/40/WHITE 148,890 GALS

Tubing Size: 2.375

Tubing Setting Depth: 4806

Tubing Packer Depth:

Tubing Multiple Packer:

Open Hole Top:

Open Hole Bottom:

Initial Test Data:

Test Date: 12/7/2005
Hours Tested: 24
Gas Disposal: SOLD

Test Method:
Gas Type:

FLOWING
WET

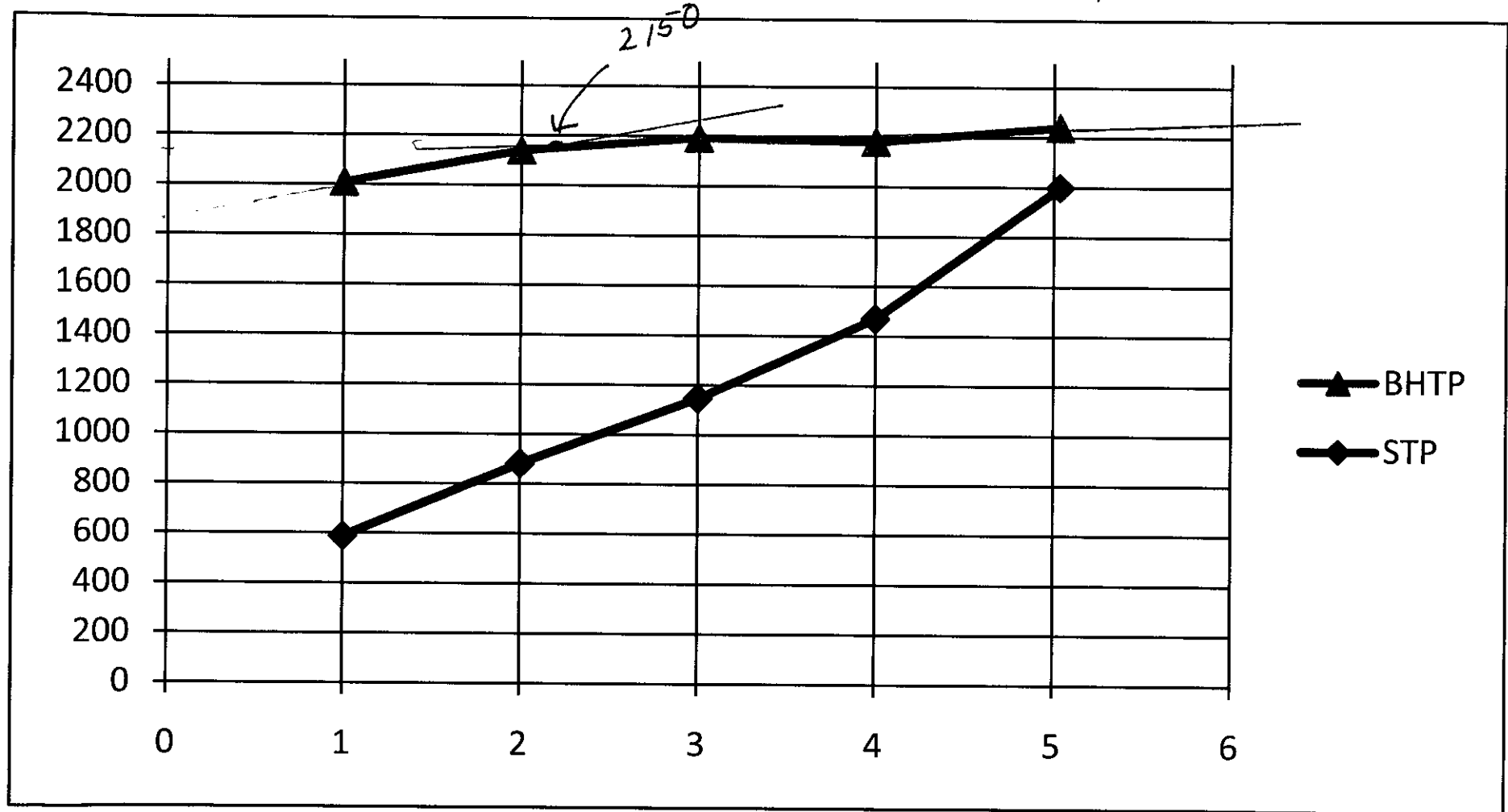
Test Type	Measure
BBLS_H2O	67
BTU_GAS	1070
CALC_BBLS_H2O	67
CALC_MCF_GAS	291
MCF_GAS	291
TUBING_PRESS	300

Perforation Data:

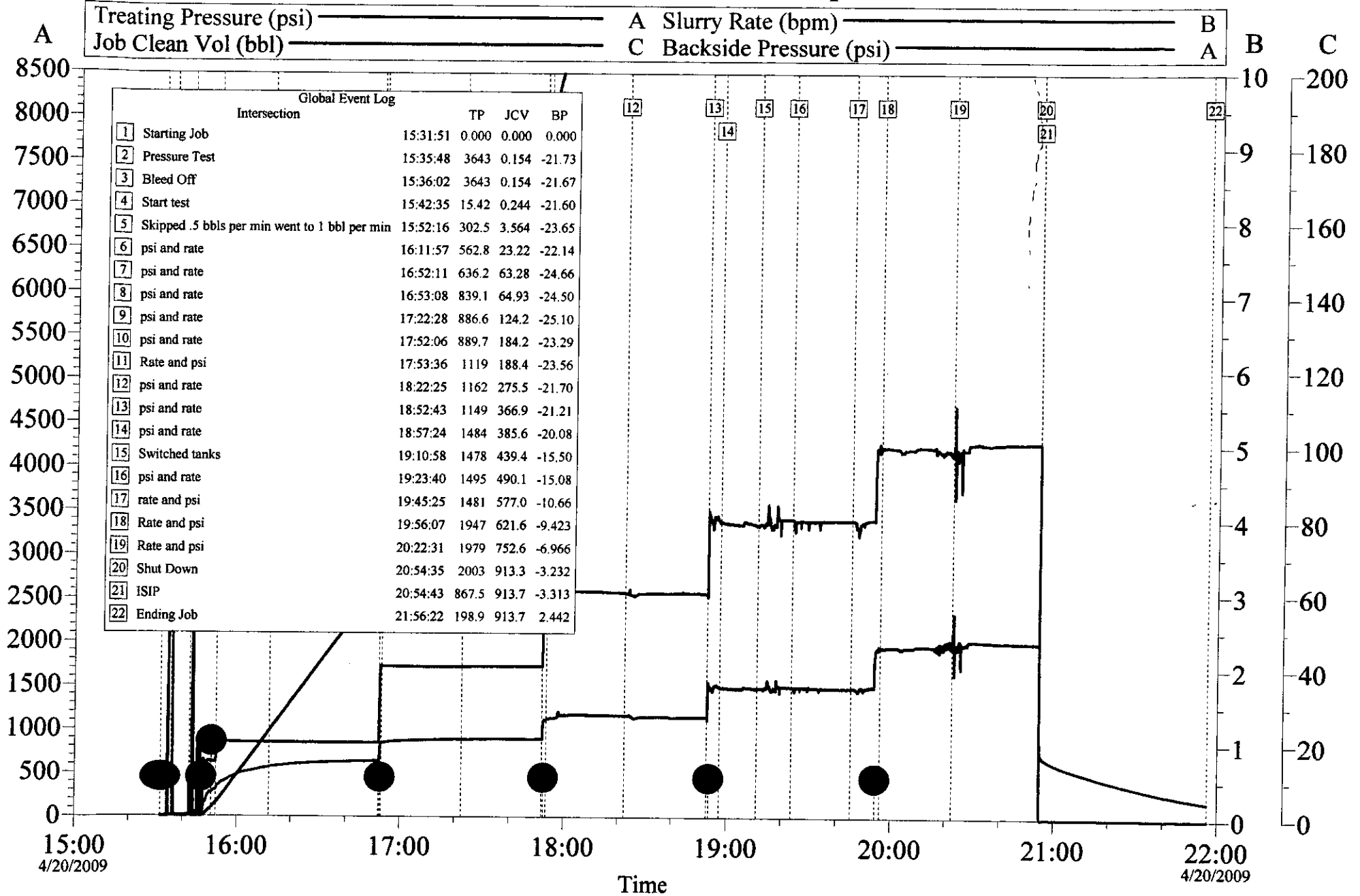
Interval Bottom: 4916
of Holes: 33

Interval Top: 4540
Hole Size: 0.34

$2150 - 1480 = 670 \text{ psi}$
 \uparrow
hydrostatic



OXY Logan Trail 28-10 Pump-In



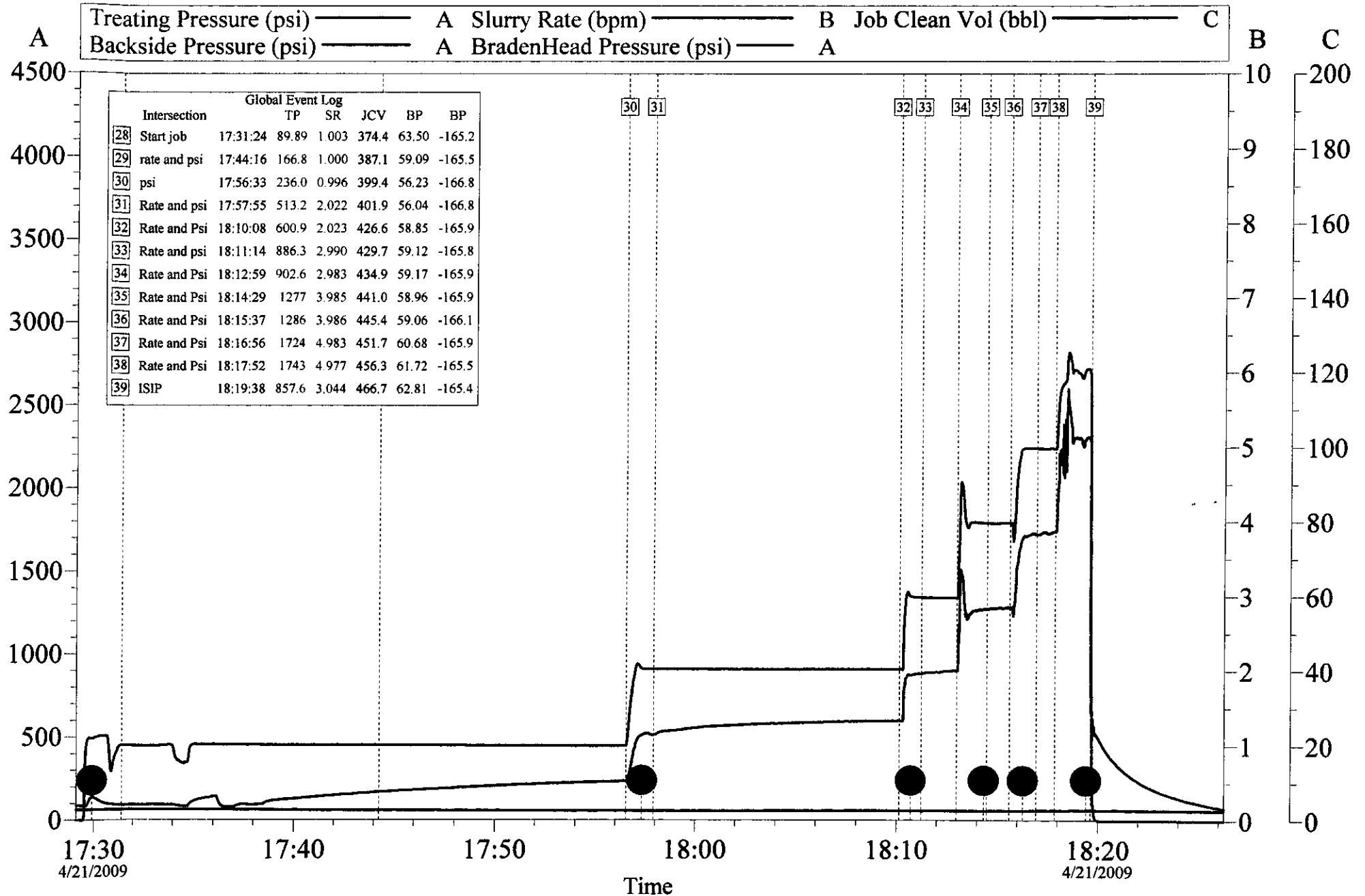
Customer: OXY GRAND JUNCTION EBUSINESS
 Well Description: LOGAN TRAIL 28-10 28-10

Job Date: 20-Apr-2009
 UWI: 05-045-10976

Sales Order #: 6626155.

INSITE for Stimulation v3.3.2
 21-Apr-09 07:30

OXY Logan Trail 28-10 Pump-In Day 2



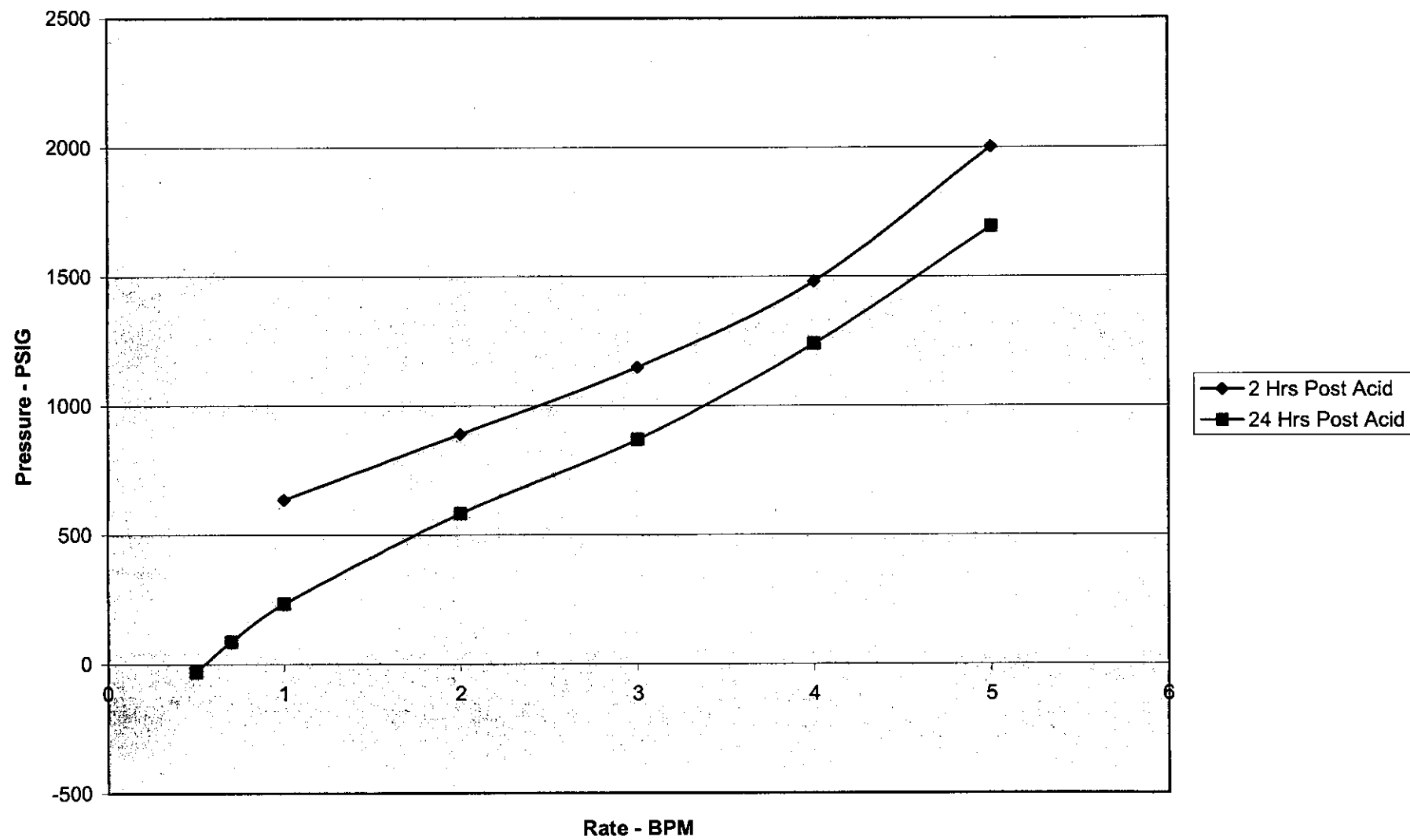
Customer: OXY GRAND JUNCTION EBUSINESS
Well Description: LOGAN TRAIL 28-10 28-10

Job Date: 21-Apr-2009
UWI: 05-045-10976

Sales Order #: 6626155..

INSITE for Stimulation v3.3.2
21-Apr-09 18:29

LT 28-10 Post Acid Injection Tests



OCT 27, 2009

**OXY USA
LOGAN TRAIL 28-10
NE SE SECTION 28 T7S R97W
GARFIELD COUNTY, COLORADO
SINGLE-WELL, NON-COMMERCIAL UNDERGROUND INJECTION PERMIT CHECKLIST**

- 1) Receipt & approval dates for Form 2 – Application for Permit to Drill (325.a.) EXISTING WELL 5/11/09 ✓
- 2) Receipt & approval dates for Form 21 – Mechanical Integrity Test (325.e.) RCVD & APPROVED ✓
 - i) Test used to check for vertical fluid movement in channels adjacent to well bore (326.a.(2)) N/A
- 3) Receipt & approval dates for Form 26 – Source of Prod. Water for Disposal (325.c.(5)) RCVD 4/27/09 ✓
- 4) Receipt & approval dates for Form 31 – Underground Inj. Form. Permit Ap. (325.a.) RCVD 4/27/09 ✓
- 5) Receipt & approval dates for Form 33 – Injection Well Permit Application (325.a.)M RCVD 4/27/09 ✓
- 6) Hearing date, if approval withheld (325.b.) N/A
- 7) Name, description, and depth of injection formation (325.c.(1)) WILLIAMS FORK 3420'-3835' ✓
- 8) Underground sources of drinking water (325.c.(1)) MESA VERDE SANDSTONES ✓
- 9) Hydrologic information request to Division of Water Resources YES - RETURNED 6/5/09 ✓
- 10) Fracture gradient of the injection formation (325.c.(1)) .69 PSI/FT ✓
- 11) Water analysis of injection formation, TDS (mg/l) (325.c.(1)) 13,564 MG/L ✓
- ~~12) If TDS < 10,000 mg/l, is an aquifer exemption attached? (324B.-)~~
 - ~~i) Was an aquifer exemption public notice published? (324B.b.)~~
 - ~~ii) Was a public hearing held? (324B.c.)~~
 - ~~iii) Was the aquifer exemption approved? (324B.d.)~~
 - ~~iv) Notice of approved aquifer exemption to Water Quality Control Commission~~
- 13) Base plat (¼-mile radius) with the following (325.c.(2)): ✓
 - i) Location of disposal well YES ✓
 - ii) location of all oil & gas wells YES ✓
 - iii) location of water wells with depths NONE
 - iv) name and address of surface owners YES BLM & SHELL ✓
 - v) name and address of mineral owners YES BLM & SHELL & PICKET ✓
- 14) Base plat (½-mile radius) with oil & gas wells producing from the disp. zone (325.c.(2)) yes ✓
- 15) Base plat showing all surface and mineral owners of record if the well is part of a field-wide system (325.c.(2)) NOT REQUIRED
- 16) Remedial action plans for wells within ¼-mile of the disposal well (325.c.(2)) ✓
- 17) A resistivity log, description of stratigraphy and/or testing data (325.c.(3)) YES ✓
- 18) A wellbore schematic showing casing, cement, bridge plugs, packers, perforations and any other relevant information (325.c.(4)) YES ✓
- 19) A surface facilities diagram showing pipelines, tanks and any other relevant information for the injection system (325.c.(4)) OK ✓

OXY USA
LOGAN TRAIL 28-10
NE SE SECTION 28 T7S R97W
GARFIELD COUNTY, COLORADO
SINGLE-WELL, NON-COMMERCIAL UNDERGROUND INJECTION PERMIT CHECKLIST

- 20) Any proposed stimulation program (325.c.(6)) ACIDIZE ✓
- 21) Estimated daily minimum and maximum injection volume (325.c.(7)) 0-4600 BWPD ✓
- 22) Maximum injection pressure, calculated by COGCC (325.c.(7)) 862 psig 6.70 mi (from step test) ✓
- 23) Names and addresses of persons notified and copies of the notices (325.i) YES ✓
- i) Surface and mineral owners within ¼-mile YES ✓
- ii) Owners and operators of wells producing in the inj. zone within ½-mile YES - OXY ONLY ✓
- iii) Owners of cornering or contiguous units producing in the inj. zone, if greater than ½-mile _____
- 24) Were the notices delivered by certified mail or personal delivery? (325.k.) CERTIFIED MAIL ✓
- 25) Do the notices include instructions on public hearing requests? (325.l.) YES ✓
- 26) Publish public notice with brief description of disposal application, including legal location,
 proposed injection zone, depth of injection and other relevant information (325.n.) 6-11-09 ✓
- 27) Any written requests for public hearing as a result of the notices? (325.m. or 325.n.) NONE ✓
- 28) Was a surface owner agreement submitted? NEED SUNDRY RCV'D 6/4/09 ✓
- 29) Was all information received by the 6-month deadline? (325.o.) YES ✓
- 30) Was a 90-day extension granted? (325.o.) _____

103 psig
harding

SITE RECLAMATION PLAN

OXY CENTRALIZED E&P WATER MANAGEMENT FACILITY

The OXY USA WTP LP (Oxy) Centralized E&P Water Management Facility will be located on property owned by Oxy. Oxy estimates that the proposed facility will be in operation for an anticipated period of approximately twenty-five (25) years during development and production of Oxy's Garfield County operations. Upon termination of the development and production activities, the project area will be reclaimed, as outlined below:

- All equipment and structures will be removed.
- Oxy will remove all safety and storm water BMPs, and other surface objects from the premises.
- Oxy will restore the site to pre-facility conditions by re-contouring and re-vegetating the site. Top soil will be redistributed across the site and will be reseeded with an approved seed mix (see attached seed mix recommendation).
- Oxy will monitor the site to ensure that 70 percent of the pre-existing vegetation is achieved, per the requirements of the CDPHE Stormwater Permit for the site.

If soil is disturbed as the result of construction activities, the soil should be stripped to a depth of approximately twelve (12) inches and stockpiled at the facility margins. The maximum depth of stockpiled shall be 24" or less to preserve soil viability. Topsoil stockpiles will be seeded as described below in the section on seeding methods and times.

RECLAMATION

Two phases of reclamation are planned. Soil stockpiles and areas disturbed by construction that will not be utilized during operation of the facility will be reclaimed immediately following facility construction. Final reclamation will be performed within one year of closure and removal of the facility. The objectives of reclamation will be as follows:

1. Stabilization of the disturbed areas will be conducted by providing wind and water erosion control to reduce soil loss.
2. Utilize the prescribed native seed mixtures and additional vegetation practices as described below to establish a self-sustaining vegetative rangeland cover for cattle pasture use.

SEEDBED PREPARATION AND SLOPE RECONSTRUCTION

Seedbed preparation and soil tillage will be completed after the application of subsoil, topsoil, and any soil amendments. Soil tillage will be to a minimum depth of 4" utilizing a disk, chisel plow, or harrow. Seedbed preparation will also include removal of coarse fragments (rock material) that exceed 35% to 40% of the soil surface as well as rocks 8" in diameter that occupy more than 10% of the soil surface.

Cut and fill slopes will be backfilled and re-contoured to a slope of 3:1 – 2.5:1 or less in instances where necessary to match the existing natural contours. Following final contouring, all backfilled or ripped surfaces will be covered evenly with topsoil. Re-contouring should form a complex slope with heavy pocking. In areas with slope greater than 3 percent, imprinting of the seed bed is recommended. Final seedbed prep will consist of scarifying/imprinting the topsoil

prior to seeding. Imprinting can be in the form of dozer tracks or furrows perpendicular to the direction of slope. When hydro-seeding or mulching, imprinting should be done prior to seeding, unless the mulch is to be crimped into the soil surface. If broadcast seeding and harrowing, imprinting will be done as part of the harrowing. Furrowing can be done by several methods, the most simple of which is to drill seed perpendicular to the direction of slope in a prepared bed. Other simple imprinting methods include deep hand raking and harrowing, always perpendicular to the direction of slope. All compacted areas will be ripped to depth of 18" with max furrow spacing of 2'. Where practicable, ripping will be conducted in two passes at perpendicular direction.

TOPSOIL

Following final contouring, all backfilled or ripped surfaces will be covered evenly with topsoil. The topsoil in the cut slope on the back of the pad will be heavily pocked using the excavator bucket to form an uneven soil surface complex which will aid in revegetation and help with slope stabilization. The fill slope, and remaining disturbed, and reclaimed areas will be track walked to aid in revegetation and slope stabilization. In areas that may not have been disturbed during the reclamation process or areas of suspected compaction that will be reseeded, measures will be taken to loosen and spread the topsoil. These measures may include scarifying the soil by racking or harrowing the soil.

FACILITY AND STRUCTURE REMOVAL

The facility will be abandoned in accordance with Colorado Oil and Gas Conservation Commission regulations; i.e. aboveground equipment will be removed from the site, pipelines will be purged and abandoned in place, concrete structures will be buried in place with a minimum of 3 feet of fill. Any residual liquids or other material present in the equipment or tanks will be removed and transported to the appropriate facility for disposal.

Soil sampling will be conducted in areas where obvious staining is present or there is other indication that material may have been released from site equipment. The samples collected will be analyzed for the analytes specified by Table 910-1 of the COGCC Rules. If necessary, a Form 27 Site Investigation and Remediation Workplan will be submitted to COGCC for approval prior to remediation of any contaminated areas. Groundwater sampling is not anticipated to be required during closure of the facility but will be implemented as needed.

BACKFILLING, GRADING, AND RE-CONTOURING

Reclaimed areas will be sloped to 3:1 – 2.5:1 or less to prevent the formation of erosion features.

TOPSOIL REPLACEMENT

Soil salvaged during construction activities will be redistributed over the soil surface after subsoil has been replaced and additional backfilling; grading, and re-contouring steps have been completed as described below. Soil will be replaced by using front-end loaders, trackhoes, and dozers. Soil will not be replaced when it is excessively wet and frozen so as to jeopardize soil structure.

SEEDING METHODS AND TIMES

Soil stockpiles and areas disturbed by construction that will not be utilized during operation of the facility will be seeded. If seeding is performed in the spring, it will be accomplished by May 15; if fall seeding is performed it will be completed after August 30 and before the soil freezes. Seeding efforts will consist of drill seeding with a rangeland drill to a planting depth of ¼" to ½" on slopes 3:1 or flatter. Broadcast seeding followed by harrowing or hand raking to lightly cover the seed with soil will be used on slopes steeper than 3:1, or on areas inaccessible for drill seeding equipment.

All areas to be reclaimed will be mulched no later than 24 hours after seeding with a weed-free straw or grass hay material. Grass hay mulch will be applied at 1 ½ tons per acre, or straw mulch will be applied at 2 tons per acre. Mulch material will be crimped into the soil surface with a commercial mulch crimper, a straight disc, or bulldozer tracks if too steep to otherwise crimp mulch in place.

SEED MIXTURES

Please see Table 1 for the seed mixtures that can be applied to reclamation efforts.

EROSION CONTROL BLANKETS

No erosion control blankets are anticipated at this time due to minimization of slopes. Refer to the site Stormwater Management Plan for other erosion control methods to be utilized.

WEED CONTROL PLAN

A qualified person will inspect the location on an annual basis. Based on this inspection, methods, materials, and timing of weed control measures will be specified.

TABLE 1

Stockpile and Disturbed Areas Reclamation

Common Name	Scientific Name	Pounds Pure Live Seed (PLS) per acre
Western wheatgrass	<i>Pascopyrum smithii</i>	8.0
	TOTAL PLS	8.0

Final Reclamation Seed Mixture 1

Common Name	Scientific Name	Pounds Pure Live Seed (PLS) per acre
Alkali Sacaton	<i>Sporobolus airoides</i>	1.0
Sideoats Grama	<i>Bouteloua curtipendula</i>	2.0
Basin Wildrye	<i>Leymus cinereus</i>	2.0
Western wheatgrass	<i>Pascopyrum smithii</i>	4.0
	TOTAL PLS	9.0

Final Reclamation Seed Mixture 2 and 3

Low-Elevation Salt-Desert Scrub/Basin Big Sagebrush

Common Name	Scientific Name	Form	PLS lbs/acre*
Fourwing Saltbush	<i>Atriplex canescens</i>	Shrub	1.9
Shadscale	<i>Atriplex confertifolia</i>	Shrub	1.5
Galleta	<i>Pleuraphis [Hilaria] jamesii</i>	Bunch	2.5
Alkali Sacaton	<i>Sporobolus airoides</i>	Bunch	0.2
Streambank Wheatgrass	<i>Elymus lanceolatus ssp. psammophilus</i> , <i>Agropyron riparium</i>	Sod-forming	2.5
Slender Wheatgrass	<i>Elymus trachycaulus</i> , <i>Agropyron trachycaulum</i>	Bunch	1.8
Sandberg Bluegrass	<i>Poa sandbergii</i> (<i>Poa secunda</i>)	Bunch	0.3

*Based on 45 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (90 PLS per square foot) if broadcast or hydroseeded.

Pinyon-Juniper Woodland, Mountain/Wyoming Big Sagebrush Shrubland

Common Name	Scientific Name	Form	PLS lbs/acre*
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	Bunch	1.9
Galleta	<i>Pleuraphis [Hilaria] jamesii</i>	Bunch	2.5
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> , <i>Agropyron spicatum</i>	Bunch	2.8
Slender Wheatgrass	<i>Elymus trachycaulus</i> , <i>Agropyron trachycaulum</i>	Bunch	3.3
Muttongrass	<i>Poa fendleriana</i>	Bunch	0.6
Sandberg Bluegrass	<i>Poa sandbergii</i> , <i>Poa secunda</i>	Bunch	0.6

*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded.

Final Reclamation Seed Mixture 4 and 5

Mixed Mountain Shrubland, Including Oakbrush

Common Name	Scientific Names	Form	PLS lbs/acre*
Thickspike Wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus, Agropyron dasystachyum</i>	Sod-forming	3.4
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata, Agropyron spicatum</i>	Bunch	3.7
Bottlebrush Squirreltail	<i>Elymus elymoides, Sitanion hystrix</i>	Bunch	2.7
Slender Wheatgrass	<i>Elymus trachycaulus, Agropyron trachycaulum</i>	Bunch	3.3
Canby Bluegrass	<i>Poa canbyi, P. secunda</i>	Bunch	0.6
Mutton Bluegrass	<i>Poa fendleriana</i>	Bunch	0.6
Letterman Needlegrass	<i>Achnatherum [Stipa] lettermanii</i>	Bunch	1.7
Columbia Needlegrass	<i>Achnatherum [Stipa] nelsonii, Stipa columbiana</i>	Bunch	1.7
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	Bunch	1.9
Junegrass	<i>Koeleria macrantha, K. cristata</i>	Bunch	0.1

*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded.

Spruce-Fir Forest, Including Mountain Meadows

Common Name	Scientific Names	Form	PLS lbs/acre*
Mountain Brome	<i>Bromopsis [Bromus] marginatus</i>	Bunch	5.8
Slender Wheatgrass	<i>Elymus trachycaulus, Agropyron trachycaulum</i>	Bunch	3.3
Letterman Needlegrass	<i>Achnatherum [Stipa] lettermanii</i>	Bunch	3.5
Blue Wildrye	<i>Elymus glaucus</i>	Bunch	4.8
Thickspike Wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus, Agropyron dasystachyum</i>	Sod-forming	3.4
Idaho Fescue	<i>Festuca idahoensis</i>	Bunch	1.2
Wheeler Bluegrass	<i>Poa nervosa</i>	Sod-forming	0.6

*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded

COST ESTIMATE TO RECLAIM THE OXY CWMF FACILITY SITE

Disconnect, dismantle and remove all facility equipment.

Labor	\$ 60,000
Equipment	\$ 30,000
Crane	\$ 50,000
Trucking	\$ 80,000
Waste container rental	<u>\$ 20,000</u>
Subtotal	\$240,000

Site Remediation

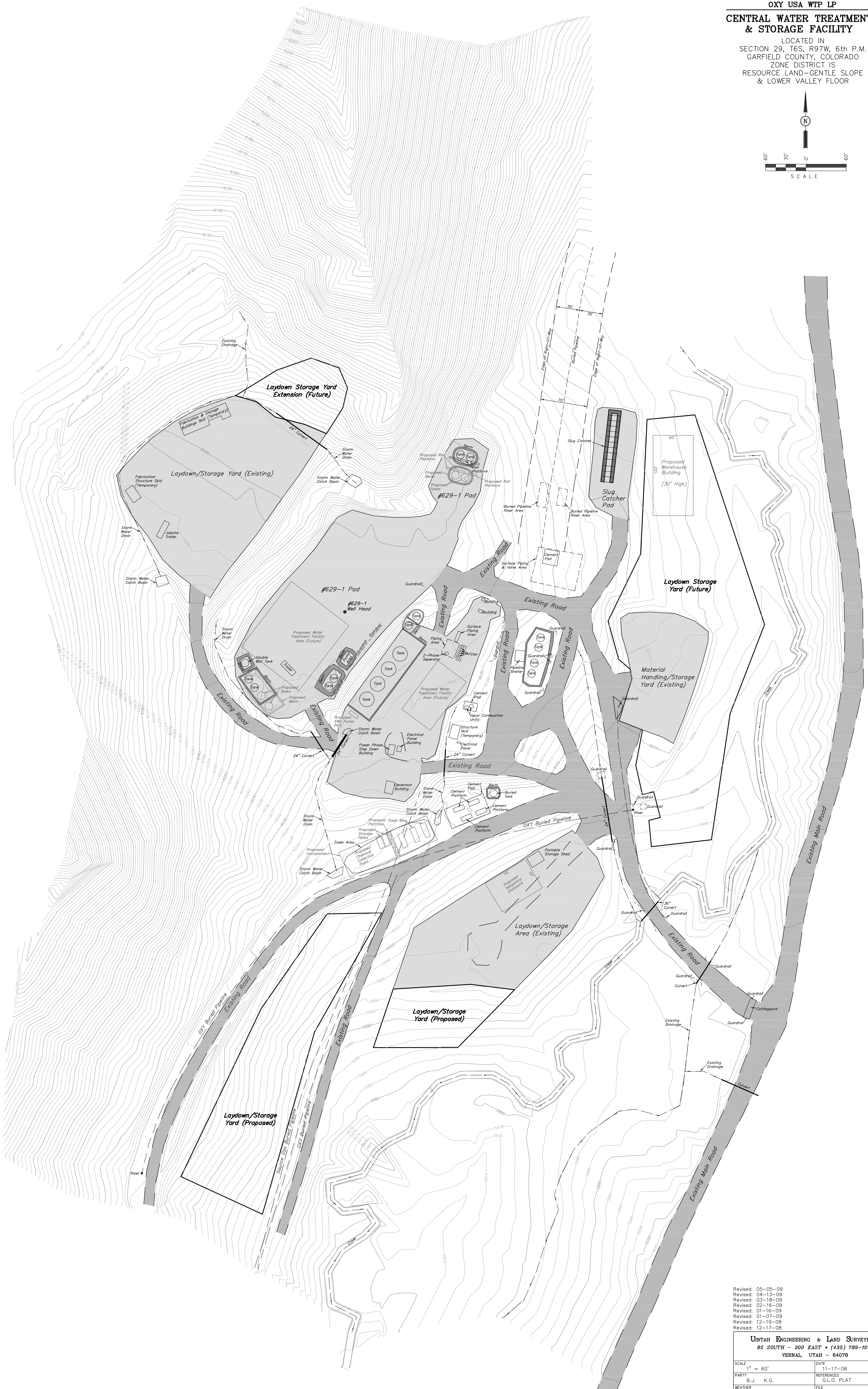
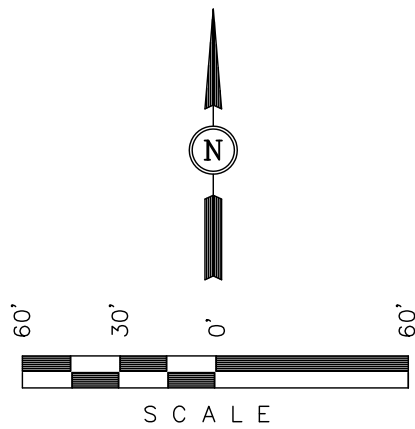
Soil Sampling per Table 910-1	\$ 12,000
Labor and Equipment to regrade site and spread topsoil cover	\$ 30,000
Labor and materials to reseed	\$ 15,000
Stormwater	\$ 10,000
Revegetation monitoring	<u>\$ 5,000</u>
Subtotal	\$ 72,000

<u>Contingency</u>	\$ 50,000
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Total Cost Estimate	\$362,000
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OXY USA WTP LP
CENTRAL WATER TREATMENT
& STORAGE FACILITY

LOCATED IN
SECTION 29, T6S, R97W, 6th P.M.
GARFIELD COUNTY, COLORADO
ZONE DISTRICT IS
RESOURCE LAND-GENTLE SLOPE
& LOWER VALLEY FLOOR



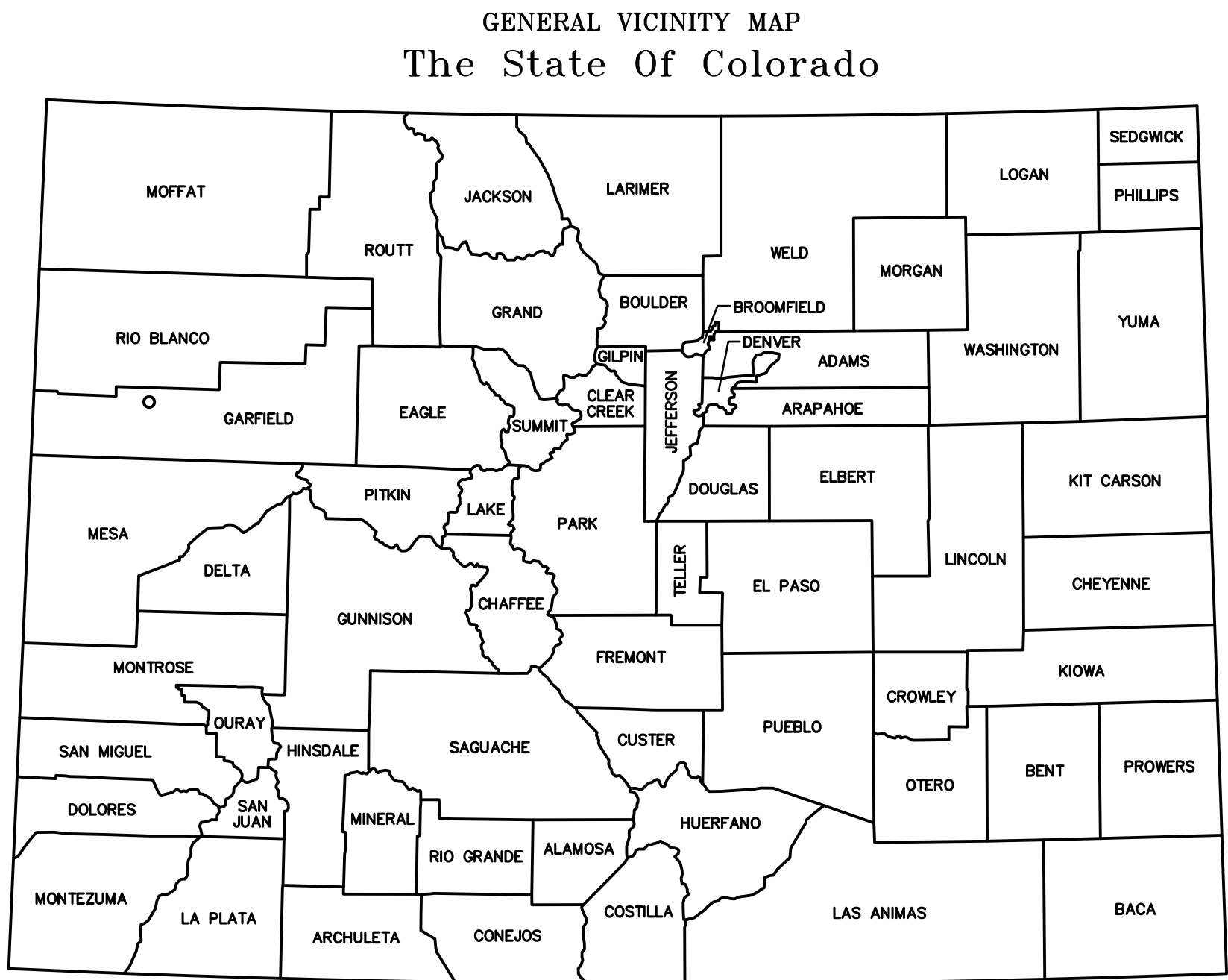
Revised: 05-05-09
Revised: 04-13-09
Revised: 03-18-09
Revised: 02-16-09
Revised: 01-16-09
Revised: 01-07-09
Revised: 12-19-08
Revised: 12-17-08

UNTAH ENGINEERING & LAND SURVEYING 85 SOUTH - 200 EAST • (435) 789-1017 VERNAL, UTAH - 84078	
SCALE 1" = 60'	DATE 11-17-08
PARTY B.J. K.G.	REFERENCES G.L.O. PLAT
WEATHER COOL	FILE 2 3 1 1 4

OXY USA WTP LP

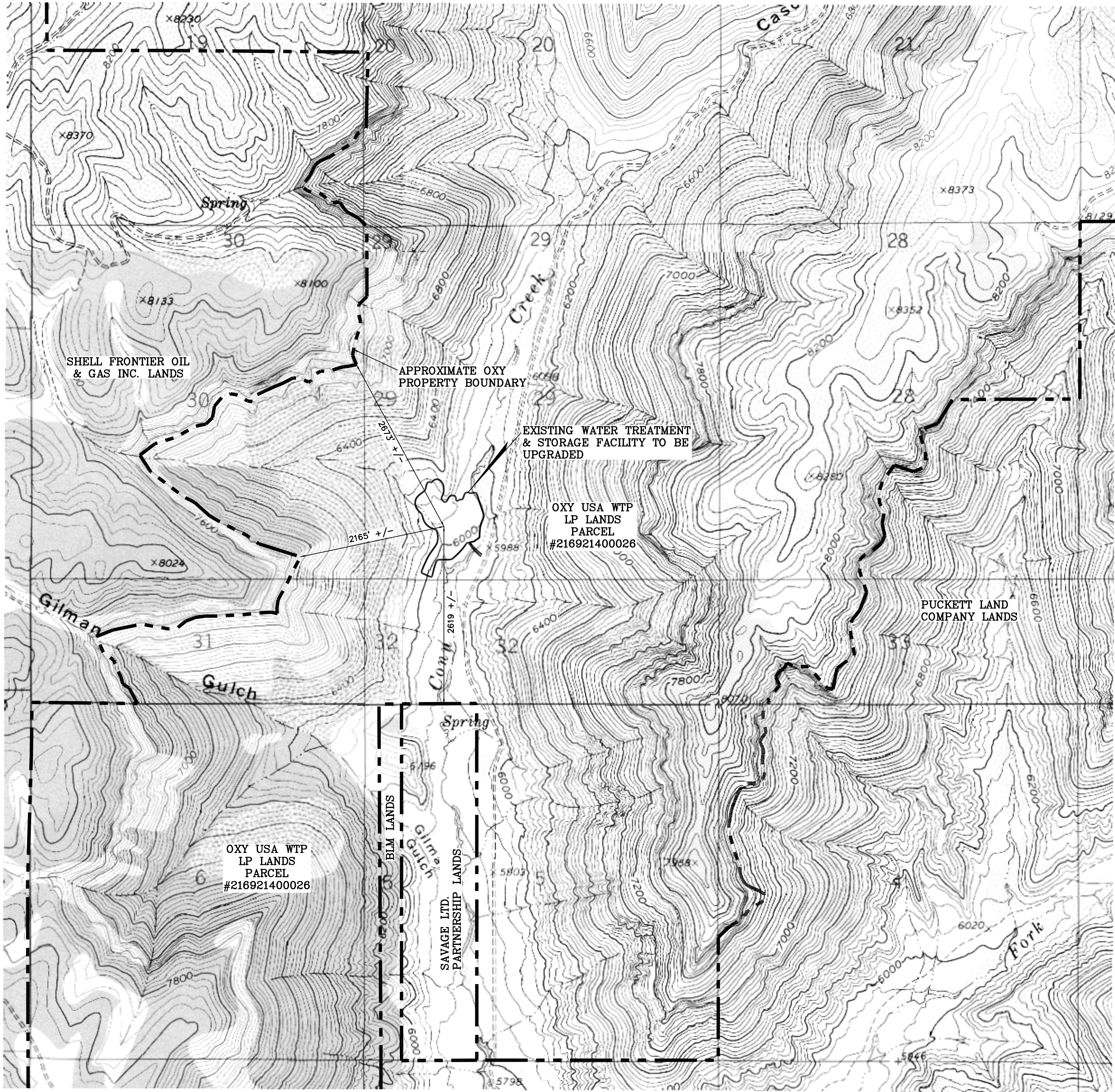
CENTRAL WATER TREATMENT
& STORAGE FACILITY

LOCATED IN
SECTION 29, T6S, R97W, 6th P.M.
GARFIELD COUNTY, COLORADO
ZONE DISTRICT IS
RESOURCE LAND-GENTLE SLOPE &
LOWER VALLEY FLOOR



NO SCALE

- SHEET INDEX
- 1 - TITLE PAGE
 - 2 - LEGAL LOCATION OF CENTRAL WATER
TREATMENT & STORAGE FACILITY
 - 3 - PROPOSED LAYOUT PLAN
 - 4 - LAYDOWN/STORAGE YARD EXTENSION (Future)
 - 5 - LAYDOWN/STORAGE YARD PLAN (Proposed)
 - 6 - LAYDOWN/STORAGE YARD PLAN (Future)




NOTE:
COMPRESSOR SITE BEARS S10°43'03"W
1962.09' FROM THE WATER TREATMENT
& STORAGE FACILITY.

SCALE 1"=1000'

OXY USA WTP LP
PARCEL NUMBER 216921400026
LEGAL DESCRIPTION

SECT.2WN,RNG:21-6-97 DESC: SEC. 4 LOTS 9(40A) 16(40A) W1/2SW SEC. 5
LOTS 5 DESC: (40.14A)6(40.03A)7(39.91A)8(E 1.62A)9(40A)10(40 DESC: A)
11(40A) 12(40A) 13(40A) 14(40A) 15(40A) 16(40A) DESC: S1/2 SEC. 6 LOTS
14(E1/2 20A) 15(40A) 16(40A) 17 DESC: (E1/2 20A) E1/2W1/2SE, E1/2SE
SECS E1/2, E1/2W1/2, DESC: SWNW, W1/2SW SEC 9 ALL SEC 15 ALL SEC
16 ALL SEC. DESC: 17 ALL SEC. 18 E1/2, SENW SEC. 19 NE, E1/2NW, DESC:
E1/2W1/2NW, THAT PT OF SESE LYING BELOW THE MAHG. DESC: MKR.(NET
14.76A) SEC 20 ALL SEC 21 ALL SEC 22 ALL SEC. DESC: SEC. 28 N1/2, THAT
PT OF THE S1/2 LYING ABOVE THE DESC: MAHG. MKR.(NET 165.4A) SEC. 29
ALL SEC. 30 THAT PT DESC: OF THE E1/2 & SW LYING BELOW THE
MAHG.MKR.(NET 151 DESC: .84A) SEC 31 THAT PT OF LOTS 5,6,7 LYING
BELOW THE DESC: MAHG. MKR.(NET 117.73A) SEC32 LOTS 1(54.85A) 2(54.
DESC: 85A) 3(54.87A) 4(54.87A) SEC. 33 THAT PT OF LOTS 3 DESC. LYING
ABOVE THE MAHG. MKR.(NET80.27A) SEC. 4-7-97 DESC: THAT PT OF TRS
78,79,80&81 LYING ABOVE MAHG. MKR. DESC: (42.7A) SEC. 5 THAT PT OF
TRS 80(125.42A) 81(130A) DESC: LYING IN SEC. 5 TR 82(80.05A) 83(80A)
SEC. 6 TR 84 DESC: (160A) 85(160A) 86(152.97A) 87(153.73A) SEC7 TR 88
DESC: (160A) 89(160A) 90(153.63A) 91(153.73A) AKA PT OF DESC: TRIUMPH
47, PT OF DENVER MINING CLAIMS 3,4,5,6, PT DESC: OF DERE 2,3,5,6
DENVER 43,44, PT OF DENVER 42,111, DESC: 112 DENVER 45-52 BK:0652

TITLE PAGE
SHEET 1 OF 5

UINTAH ENGINEERING & LAND SURVEYING			
 86 SOUTH 200 EAST VERNAL, UTAH 84078 — SINCE 1964 — PHONE: (435) 780-1017 uel@uintahinc.com			
SCALE:	AS SHOWN	DATE:	REV:
SURVEYED BY:	B.J.	DRAWN BY:	D.N.W.
FILE:			
			2 3 1 6 6

T6S, R97W, 6th P.M.

LEGEND:

L = 90° SYMBOL

● = PROPOSED WELL HEAD.

▲ = SECTION CORNERS LOCATED.

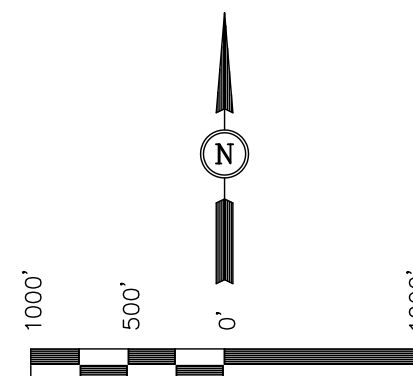
(NAD 83)
 LATITUDE = 39°29'20.31" (39.488975)
 LONGITUDE = 108°14'54.47" (108.248464)
 (NAD 27)
 LATITUDE = 39°29'20.39" (39.488997)
 LONGITUDE = 108°14'52.17" (108.247825)

OXY USA WTP LP

CENTRAL WATER TREATMENT & STORAGE
FACILITY, located as shown in the SW 1/4
SW 1/4 of Section 29, T6S, R97W, 6th P.M.,
Garfield County, Colorado.

BASIS OF ELEVATION

SPOT ELEVATION AT THE NORTHWEST CORNER OF SECTION 30, T5S, R95W, 6th P.M. TAKEN FROM THE FORKED GULCH QUADRANGLE, COLORADO, GARFIELD COUNTY, 7.5 MINUTE SERIES (TOPOGRAPHICAL MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 5966 FEET.



S C A L E
CERTIFICATE

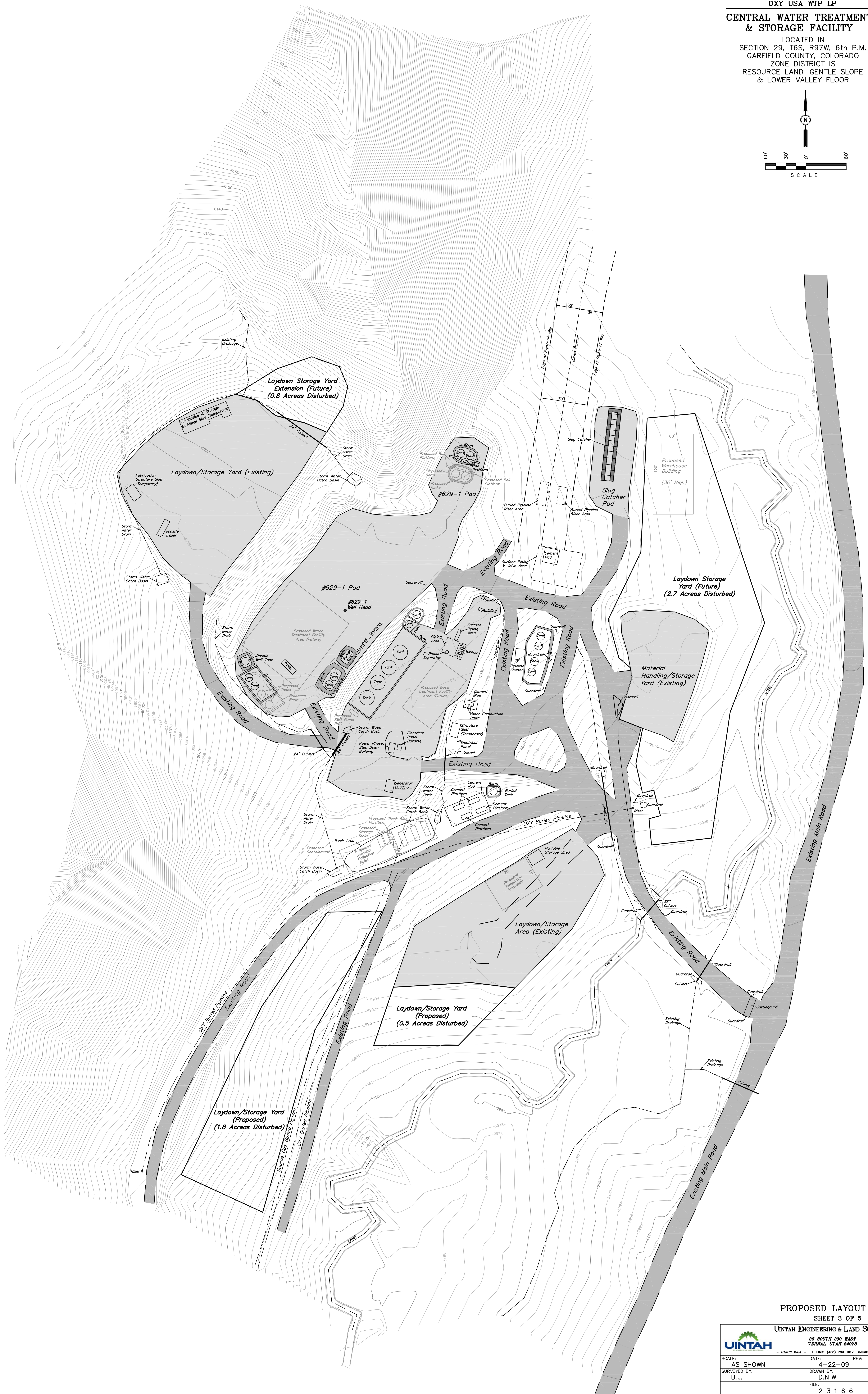
THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED AND
LOCATION AS SHOWN WAS STAKED ON THE GROUND FROM FIELD
NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY
SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO
THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
REGISTRATION NO. 17492
STATE OF COLORADO

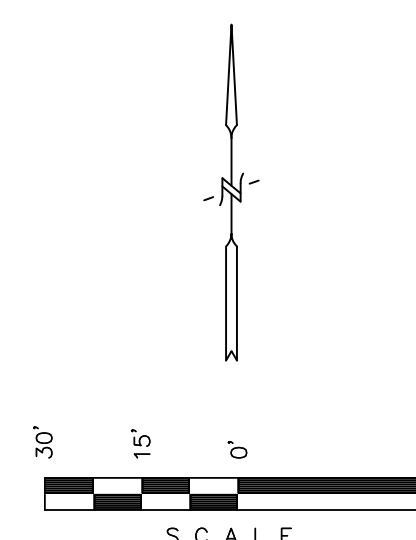
LEGAL LOCATION
SHEET 2 OF 6

UTAH ENGINEERING & LAND SURVEYING
 85 SOUTH 200 EAST - VERNAL, UTAH 84078
 (435) 789-1017

SCALE 1" = 1000'	DATE SURVEYED: 12-14-08	DATE DRAWN: 04-28-09
PARTY B.J. B.B. K.G.	REFERENCES G.L.O. PLAT	
WEATHER COOL	FILE OXY USA WTP 1 P	




LOCATED IN
SECTION 29, T6S, R97W, 6th P.M.
GARFIELD COUNTY, COLORADO
ZONE DISTRICT IS
RESOURCE LAND—GENTLE SLOPE
& LOWER VALLEY FLOOR



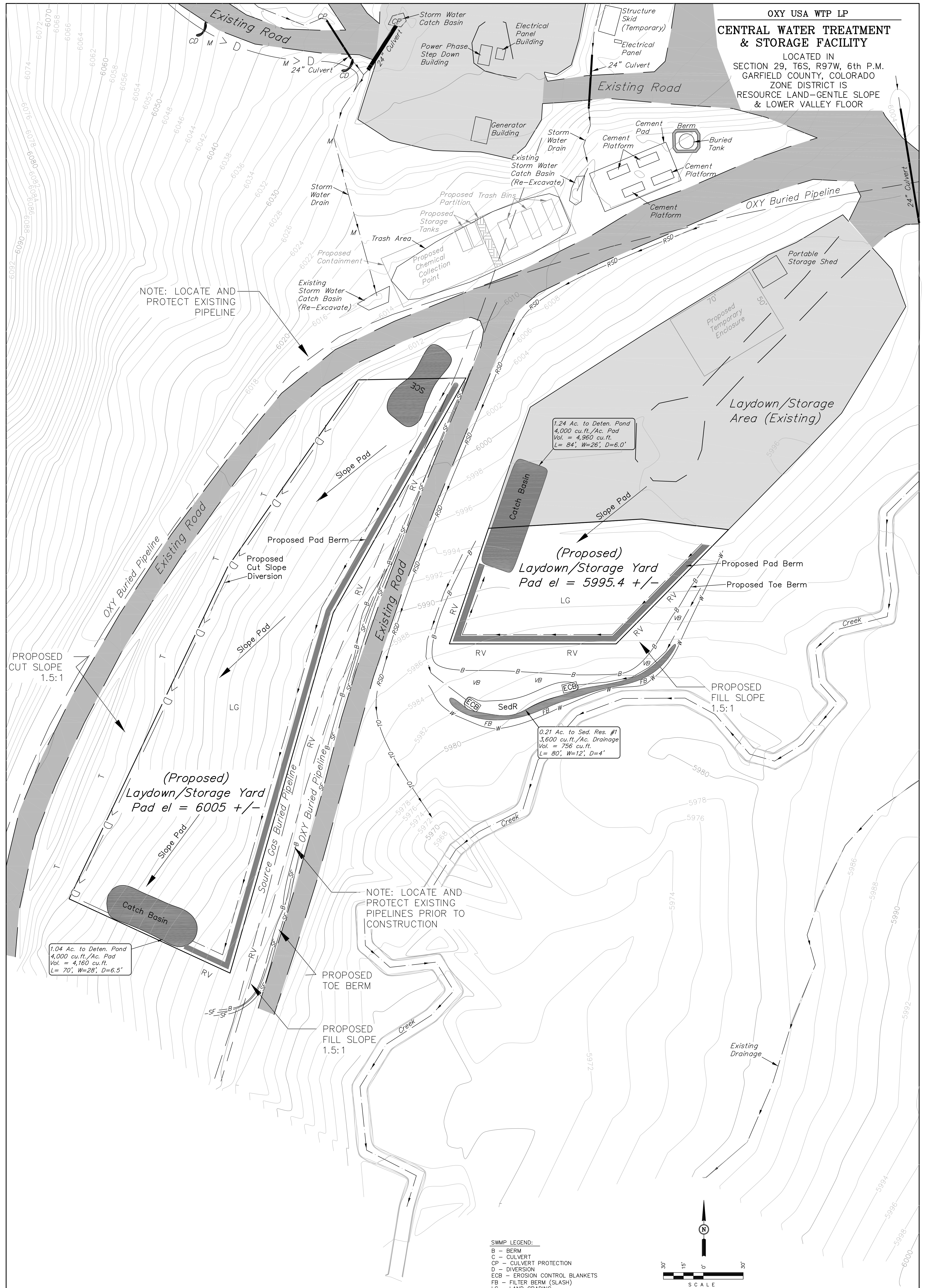
PRELIMINARY
*PROPOSED EROSION CONTROL,
GRADING & DRAINAGE PLAN*
FACILITIES LAYDOWN YARD PLAN

SHEET 4 OF 6

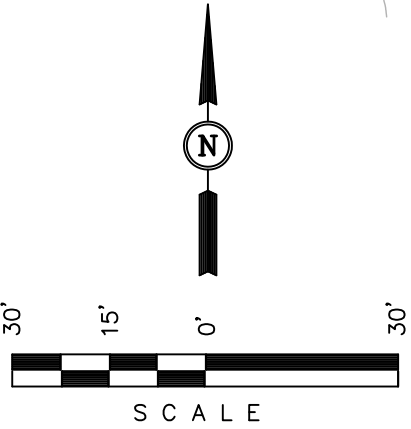
 <p>UINTAH ENGINEERING & LAND SURVEYING 85 SOUTH 200 EAST VERNAL, UTAH 84078 — SINCE 1964 — PHONE: (435) 780-1017 usa@uelinc.com</p>	
SCALE:	DATE:
AS SHOWN	5-11-09
SURVEYED BY:	DRAWN BY:
B.J.	D.N.W.
	FILE:
	2 3 1 6 6

OXY USA WTP LP
**CENTRAL WATER TREATMENT
& STORAGE FACILITY**

LOCATED IN
SECTION 29, T6S, R97W, 6th P.M.
GARFIELD COUNTY, COLORADO
ZONE DISTRICT IS
RESOURCE LAND-GENTLE SLOPE
& LOWER VALLEY FLOOR

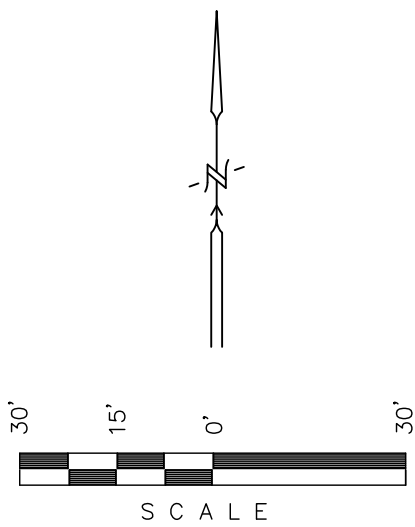


- SWMP LEGEND:**
- B - BERM
 - C - CULVERT
 - CP - CULVERT PROTECTION
 - D - DIVERSION
 - ECB - EROSION CONTROL BLANKETS
 - FB - FILTER BERM (SLASH)
 - LG - LAND GRADING
 - M - MULCHING
 - R - RIPRAP
 - RSD - ROADSIDE DITCHES
 - SCE - STABILIZED CONSTRUCTION ENTRANCE
 - SF - SILT FENCE
 - T - TERRACING
 - VB - VEGETATED BUFFER
 - W - WATTLES

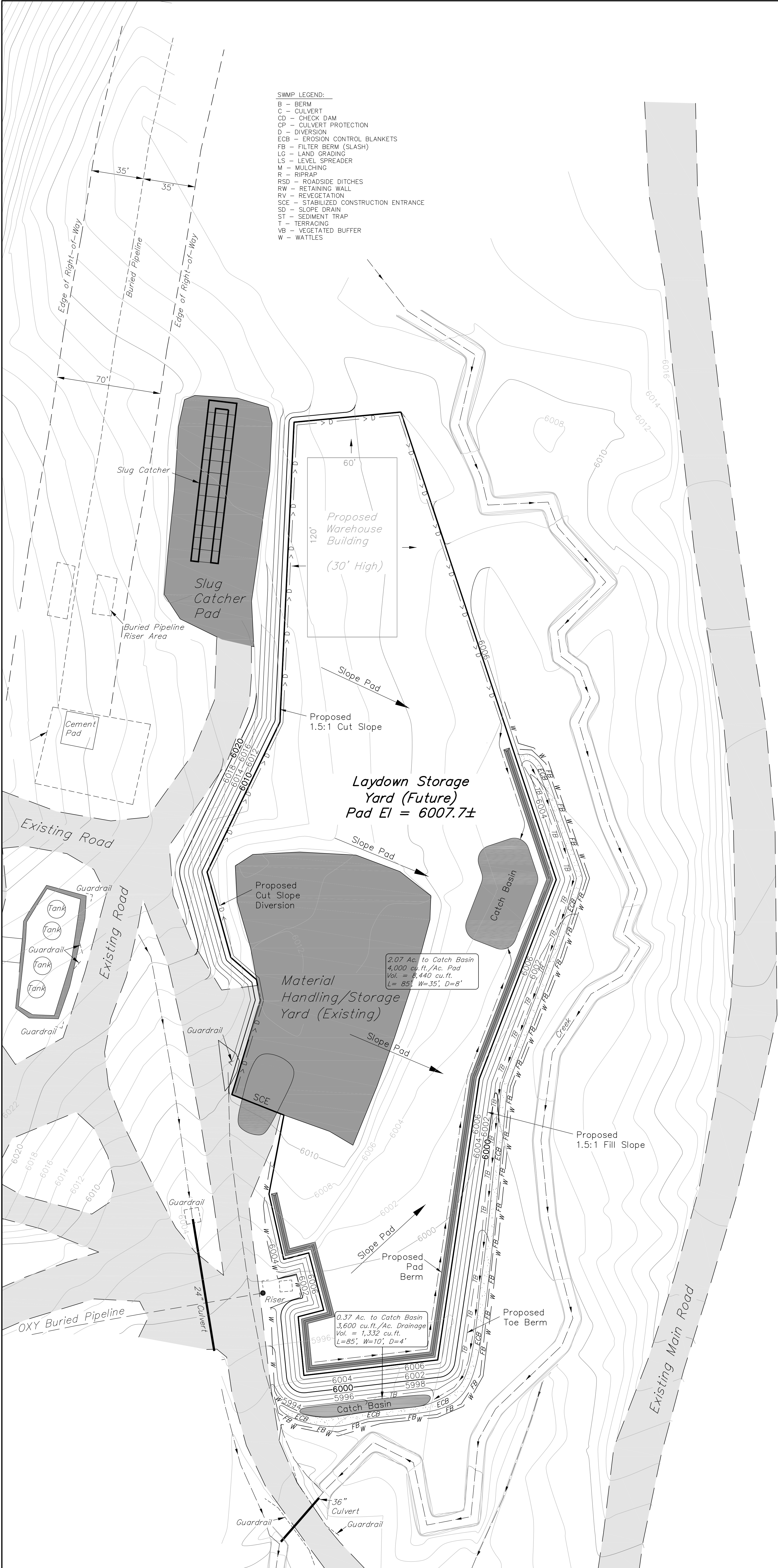


**LAYDOWN/STORAGE
YARD PLAN (Proposed)**
SHEET 5 OF 6

UINTAH ENGINEERING & LAND SURVEYING <small>85 SOUTH 200 EAST VERNAL, UTAH 84078</small>	
SCALE: AS SHOWN	DATE: 4-22-09
SURVEYED BY: B.J.	DRAWN BY: D.N.W.
	FILE: 2 3 1 6 6



- SWMP LEGEND:
- B - BERM
 - C - CULVERT
 - CD - CHECK DAM
 - CP - CULVERT PROTECTION
 - D - DIVERSION
 - ECB - EROSION CONTROL BLANKETS
 - FB - FILTER BERM (SLASH)
 - LG - LAND GRADING
 - LS - LEVEL SPREADER
 - M - MULCHING
 - R - RIPRAP
 - RSD - ROADSIDE DITCHES
 - RW - RETAINING WALL
 - RV - REVEGETATION
 - SCE - STABILIZED CONSTRUCTION ENTRANCE
 - SD - SLOPE DRAIN
 - ST - SEDIMENT TRAP
 - T - TERRACING
 - VB - VEGETATED BUFFER
 - W - WATTLES



PRELIMINARY
PROPOSED EROSION CONTROL,
GRADING & DRAINAGE PLAN
WAREHOUSE AREA



State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax: (303)894-2109



RECEIVED
FOR OGCC USE ONLY

MAR 13 2009

COGCC

Complete the
Attachment Checklist

SOURCE OF PRODUCED WATER FOR DISPOSAL

This form must be completed for any new disposal site and for any change in sources of produced water for an existing disposal site.

OGCC Operator Number: <u>66571</u>	Contact Name and Telephone:
Name of Operator: <u>OXY USA WTP LP</u>	<u>Blair K. Rollins</u>
Address: <u>P.O. Box 27757</u>	No: <u>(970) 263-3629</u>
City: <u>Houston</u> State: <u>TX</u> Zip: <u>77227</u>	Fax: <u>(970) 263-3695</u>
OGCC Disposal Facility Number: <u>159281</u>	
Operator's Disposal Facility Name: <u>CC Injection Well</u> Operator's Disposal Facility Number: <u>629-1</u>	
Location (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWSW, Sec 29, T6S, R97W, 6th PM</u>	
Address: <u>760 Horizon Drive, Suite 101 (Mailing address)</u>	
City: <u>Grand Junction</u> State: <u>CO</u> Zip: <u>81506</u> County: <u>Garfield</u>	

Chemical Analysis of fluid	Oper	OGCC

If more space is required,
attach additional sheet.

Add Source:	OGCC Lease No: _____	API No: <u>See Attached List</u>	Well Name & No: <u>See Attached List</u>
<input checked="" type="checkbox"/>	Operator Name: <u>OXY USA WTP LP</u>	Operator No: <u>66571</u>	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____
Add Source:	OGCC Lease No: _____	API No: <u>See attached list</u>	Well Name & No: <u>See attached list</u>
<input checked="" type="checkbox"/>	Operator Name: <u>OXY USA Inc.</u>	Operator No: <u>66561</u>	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____
Add Source:	OGCC Lease No: _____	API No: _____	Well Name & No: _____
<input type="checkbox"/>	Operator Name: _____	Operator No: _____	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____
Add Source:	OGCC Lease No: _____	API No: _____	Well Name & No: _____
<input type="checkbox"/>	Operator Name: _____	Operator No: _____	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____
Add Source:	OGCC Lease No: _____	API No: _____	Well Name & No: _____
<input type="checkbox"/>	Operator Name: _____	Operator No: _____	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Blair K. Rollins

Signed: Blair K. Rollins

Title: Regulatory Analyst

Date: February 23, 2009

OGCC Approved: D K DILLON

Title: ENGINEERING
MANAGER

Date: 6/5/09

CONDITIONS OF APPROVAL, IF ANY:

API NUMBER	WELL NAME	WELL NO.	FIELD	OGCC Lease Number	LOCATION	Operator Name	Operator Number	Producing Formation	Analysis Attached	Transported to disposal site via:	TDS	Add Source
05-045-10856	Cascade Creek	603-23-32	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12412	CASCADE CREEK	697-3-51D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12400	CASCADE CREEK	697-03-67D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12409	CASCADE CREEK	697-3-73D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12410	CASCADE CREEK	697-3-75D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12411	CASCADE CREEK	697-10-2D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12404	CASCADE CREEK	697-3-25D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12405	CASCADE CREEK	697-3-41D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12406	CASCADE CREEK	697-4-29D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12407	CASCADE CREEK	697-4-39D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12408	CASCADE CREEK	697-4-54D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10754	CASCADE CRK	604-41-32	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13465	CASCADE CREEK	604-12-13	GRAND VALLEY	31290	LOT 16 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10185	CASCADE CREEK	604-44	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12402	CASCADE CREEK	697-3-57D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12401	CASCADE CREEK	697-4-56D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12414	CASCADE CREEK	697-4-62D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12413	CASCADE CREEK	697-4-78D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12403	CASCADE CREEK	697-4-88D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10194	OXY FEDERAL	604-11	GRAND VALLEY	31290	NWNW 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11772	CASCADE CREEK	697-04-52	GRAND VALLEY	31290	SESW 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-06871	CASCADE CREEK	604-1	GRAND VALLEY	31290	SWSW 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10676	CASCADE CREEK	697-5-14	GRAND VALLEY	31290	LOT 11 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07522	CASCADE CREEK	605-23	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12457	CASCADE CREEK	697-5-50DB	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12454	CASCADE CREEK	697-5-59D	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12453	CASCADE CREEK	697-5-60D	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12456	CASCADE CREEK	697-5-67D	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12455	CASCADE CREEK	697-5-50DA	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07210	CASCADE CREEK	605-2	GRAND VALLEY	31290	NWSE 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10547	CASCADE CREEK	605-13-22	GRAND VALLEY	31290	NWSW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-06897	CASCADE CREEK	605-1	GRAND VALLEY	31290	SESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11773	CASCADE CREEK	697-05-56	GRAND VALLEY	31290	SESE 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07519	CASCADE CREEK	608-41	GRAND VALLEY	31290	NENE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10653	CASCADE CREEK	608-43-31	GRAND VALLEY	31290	NESE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10675	CASCADE CREEK	697-08-53	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12280	CASCADE CREEK	697-8-38DB	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12278	CASCADE CREEK	697-8-45D	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12277	CASCADE CREEK	697-8-46DA	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12276	CASCADE CREEK	697-8-46DB	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12279	CASCADE CREEK	697-8-54DA	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07520	CASCADE CREEK	609-33	GRAND VALLEY	31290	NWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-06870	CASCADE CREEK	609-1	GRAND VALLEY	31290	NWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07320	CASCADE CREEK	609-2	GRAND VALLEY	31290	SESW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17697	CASCADE CREEK	697-16-11B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14298	CASCADE CREEK	697-9-60D	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15135	CASCADE CREEK	697-09-52A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15136	CASCADE CREEK	697-09-44B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16226	CASCADE CREEK	697-09-35C	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16225	CASCADE CREEK	697-09-37B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16227	CASCADE CREEK	697-09-58	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes

RECEIVED
MAR 13 2009
OGCC

05-045-16228	CASCADE CREEK	697-16-02A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16230	CASCADE CREEK	697-16-11A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16229	CASCADE CREEK	697-16-21A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-14445	CASCADE CREEK	697-09-52B	WILDCAT	99999	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16001	CASCADE CREEK	697-09-62B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16010	CASCADE CREEK	697-09-54A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16009	CASCADE CREEK	697-09-54B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16006	CASCADE CREEK	697-09-60B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16020	CASCADE CREEK	697-09-62A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16016	CASCADE CREEK	697-16-13A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16008	CASCADE CREEK	697-09-46	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16018	CASCADE CREEK	697-16-04	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16019	CASCADE CREEK	697-16-13B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16007	CASCADE CREEK	697-09-44A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16017	CASCADE CREEK	697-16-05	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-16984	CASCADE CREEK	697-16-09A	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17695	CASCADE CREEK	697-17-08A	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17571	CASCADE CREEK	697-09-50A	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17574	CASCADE CREEK	697-08-56B	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17573	CASCADE CREEK	697-08-64B	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17572	CASCADE CREEK	697-16-02B	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17693	CASCADE CREEK	697-16-09B	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17694	CASCADE CREEK	697-09-58	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17696	CASCADE CREEK	697-16-01	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10201	CASCADE CREEK	609-14	GRAND VALLEY	31290	SWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10864	CASCADE CREEK	610-21-41	GRAND VALLEY	31290	NENW 10 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11792	CASCADE CREEK	697-10-34	GRAND VALLEY	31290	NWSW 10 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10855	CASCADE CREEK	610-22-43	GRAND VALLEY	31290	SENW 10 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10854	CASCADE CREEK	610-24-43	GRAND VALLEY	31290	SESW 10 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-07808	CASCADE CREEK	610-12	GRAND VALLEY	31290	SWNW 10 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17692	CASCADE CREEK	697-09-56B	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18009	CASCADE CREEK	697-09-64A	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18023	CASCADE CREEK	697-10-59	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18010	CASCADE CREEK	697-10-58	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18011	CASCADE CREEK	697-10-50B	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18022	CASCADE CREEK	697-10-50A	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18027	CASCADE CREEK	697-15-19A	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18026	CASCADE CREEK	697-15-11B	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18025	CASCADE CREEK	697-15-11A	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18055	CASCADE CREEK	697-15-09B	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18024	CASCADE CREEK	697-15-03B	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18028	CASCADE CREEK	697-15-03A	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10686	CASCADE CREEK	697-15-01	GRAND VALLEY	31290	NWNW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-09844	OXY FEDERAL	23-15	GRAND VALLEY	31290	NWSW 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10688	CASCADE CREEK	697-15-23	GRAND VALLEY	31290	SENE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12234	CASCADE CREEK	697-15-21D	GRAND VALLEY	31290	SENE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12221	CASCADE CREEK	697-15-22D	GRAND VALLEY	31290	SENE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12223	CASCADE CREEK	697-15-29D	GRAND VALLEY	31290	SENE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12224	CASCADE CREEK	697-15-30D	GRAND VALLEY	31290	SENE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12222	CASCADE CREEK	697-15-31D	GRAND VALLEY	31290	SENE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes

05-045-10687	CASCADE CREEK	697-15-54	GRAND VALLEY	31290	SWSE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18008	CASCADE CREEK	697-15-46	GRAND VALLEY	31290	SWSE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18007	CASCADE CREEK	697-15-63A	GRAND VALLEY	31290	SWSE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18006	CASCADE CREEK	697-15-38	GRAND VALLEY	31290	SWSE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18005	CASCADE CREEK	697-15-55A	GRAND VALLEY	31290	SWSE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18004	CASCADE CREEK	697-15-40B	GRAND VALLEY	31290	SWSE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-18003	CASCADE CREEK	697-15-40A	GRAND VALLEY	31290	SWSE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17433	CASCADE CREEK	697-15-61	GRAND VALLEY	31290	SWSE 15 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13180	CASCADE CREEK	697-16-32	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13992	CASCADE CREEK	697-16-31	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13993	CASCADE CREEK	697-16-23BD	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13994	CASCADE CREEK	697-16-23DA	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13995	CASCADE CREEK	697-16-15DC	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13996	CASCADE CREEK	697-16-15DB	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13990	CASCADE CREEK	697-16-15A	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13991	CASCADE CREEK	697-16-07	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13986	CASCADE CREEK	697-16-06	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13987	CASCADE CREEK	697-15-25	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13988	CASCADE CREEK	697-15-17B	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13989	CASCADE CREEK	697-15-17DA	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13984	CASCADE CREEK	697-15-09DB	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13985	CASCADE CREEK	697-15-09A	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13997	CASCADE CREEK	697-05-01A	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13983	CASCADE CREEK	697-09-64	GRAND VALLEY	31290	NENE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10444	CASCADE CREEK	616-21-32	GRAND VALLEY	31290	NENW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10683	CASCADE CREEK	697-16-42	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12233	CASCADE CREEK	697-17-48D	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12231	CASCADE CREEK	697-16-49D	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12232	CASCADE CREEK	697-16-34	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12219	CASCADE CREEK	697-16-25A	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12229	CASCADE CREEK	697-16-35	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17051	CASCADE CREEK	697-17-64B	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17604	CASCADE CREEK	697-16-25B	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17603	CASCADE CREEK	697-16-42B	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17607	CASCADE CREEK	697-16-42A	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17606	CASCADE CREEK	697-16-33	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-17605	CASCADE CREEK	697-16-27A	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12230	CASCADE CREEK	697-16-51D	GRAND VALLEY	31290	NWSW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12220	CASCADE CREEK	697-16-12D	GRAND VALLEY	31290	SENW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12227	CASCADE CREEK	697-16-18D	GRAND VALLEY	31290	SENW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12226	CASCADE CREEK	697-16-29D	GRAND VALLEY	31290	SENW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12228	CASCADE CREEK	697-16-28D	GRAND VALLEY	31290	SENW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12225	CASCADE CREEK	697-16-37D	GRAND VALLEY	31290	SENW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10865	CASCADE CREEK	697-16-28	GRAND VALLEY	31290	SENW 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-15014	CC	697-16-60	WILDCAT	99999	SWSE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-15642	CC	697-16-40A	WILDCAT	99999	SWSE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-15643	CC	697-16-40B	WILDCAT	99999	SWSE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-15644	CC	697-16-48A	WILDCAT	99999	SWSE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-15641	CC	697-16-54A	WILDCAT	99999	SWSE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-15227	CC	697-16-38	WILDCAT	99999	SWSE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-15230	CC	697-16-46A	WILDCAT	99999	SWSE 16 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes

05-045-13029	CASCADE CREEK	697-20-17D	GRAND VALLEY	31290	NENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13034	CASCADE CREEK	697-17-62D	GRAND VALLEY	31290	NENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13030	CASCADE CREEK	697-20-25D	GRAND VALLEY	31290	NENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13031	CASCADE CREEK	697-20-06D	GRAND VALLEY	31290	NENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13039	CASCADE CREEK	697-20-20D	GRAND VALLEY	31290	NENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13038	CASCADE CREEK	697-20-14D	GRAND VALLEY	31290	NENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13032	CASCADE CREEK	697-20-19D	GRAND VALLEY	31290	NENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13486	CASCADE CREEK	620-43-32	GRAND VALLEY	31290	NESE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11807	CASCADE CREEK	697-20-56DA	GRAND VALLEY	31290	NESE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11818	CASCADE CREEK	697-20-56DB	GRAND VALLEY	31290	NESE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11808	CASCADE CREEK	697-20-39D	GRAND VALLEY	31290	NESE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10685	CASCADE CREEK	697-20-35D	GRAND VALLEY	31290	NWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10684	CASCADE CREEK	697-20-30D	GRAND VALLEY	31290	NWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11686	CASCADE CREEK	697-20-43D	GRAND VALLEY	31290	NWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11678	CASCADE CREEK	697-20-54D	GRAND VALLEY	31290	NWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-07521	CASCADE CREEK	620-33	GRAND VALLEY	31290	NWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11549	CASCADE CREEK	697-20-36D	GRAND VALLEY	31290	SENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11548	CASCADE CREEK	697-20-22D	GRAND VALLEY	31290	SENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11546	CASCADE CREEK	697-20-34D	GRAND VALLEY	31290	SENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11547	CASCADE CREEK	697-20-26D	GRAND VALLEY	31290	SENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10477	CASCADE CREEK	697-20-28	GRAND VALLEY	31290	SENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12085	CASCADE CREEK	697-20-30DB	GRAND VALLEY	31290	SENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11894	CASCADE CREEK	697-20-21D	GRAND VALLEY	31290	SENW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11965	CASCADE CREEK	697-20-53D	GRAND VALLEY	31290	SESW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11966	CASCADE CREEK	697-20-61D	GRAND VALLEY	31290	SESW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12010	CASCADE CREEK	697-20-50D	GRAND VALLEY	31290	SESW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12009	CASCADE CREEK	697-20-58D	GRAND VALLEY	31290	SESW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13377	CASCADE CREEK	620-24-43	GRAND VALLEY	31290	SESW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-06861	CASCADE CREEK	620-1	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13849	CASCADE CREEK	697-20-64D	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10567	CASCADE CREEK	697-29-07DA	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13852	CASCADE CREEK	697-20-40D	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13957	CASCADE CREEK	697-29-15DB	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13958	CASCADE CREEK	697-29-07DB	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13956	CASCADE CREEK	697-29-04D	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13955	CASCADE CREEK	697-20-62D	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13954	CASCADE CREEK	697-20-52D	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13953	CASCADE CREEK	697-20-37D	GRAND VALLEY	31290	SWSE 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10478	CASCADE CREEK	697-20-50	GRAND VALLEY	31290	SWSW 20 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11811	CASCADE CREEK	697-29-29D	GRAND VALLEY	31290	NESW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11809	CASCADE CREEK	697-29-54D	GRAND VALLEY	31290	NESW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11810	CASCADE CREEK	697-29-34D	GRAND VALLEY	31290	NESW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-13433	CASCADE CREEK	629-23-42	GRAND VALLEY	31290	NESW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11926	CASCADE CREEK	697-29-36D	GRAND VALLEY	31290	NESW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11812	CASCADE CREEK	697-29-46D	GRAND VALLEY	31290	NESW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11813	CASCADE CREEK	697-29-45D	GRAND VALLEY	31290	NESW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-12181	CASCADE CREEK	697-29-22D	GRAND VALLEY	31290	NWNE 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11815	CASCADE CREEK	697-29-20D	GRAND VALLEY	31290	NWNE 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11817	CASCADE CREEK	697-29-15D	GRAND VALLEY	31290	NWNE 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11814	CASCADE CREEK	697-20-59D	GRAND VALLEY	31290	NWNE 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-11816	CASCADE CREEK	697-29-15DX	GRAND VALLEY	31290	NWNE 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-07811	CASCADE CREEK	629-31-11	GRAND VALLEY	31290	NWNE 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes
05-045-10566	CASCADE CREEK	697-29-10D	GRAND VALLEY	31290	SENN 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck	Yes

05-045-10565	CASCADE CREEK	697-29-26D	GRAND VALLEY	31290	SENW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10564	CASCADE CREEK	697-29-30D	GRAND VALLEY	31290	SENW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10563	CASCADE CRREK	697-29-38D	GRAND VALLEY	31290	SENW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-06869	CASCADE CREEK	629-2	GRAND VALLEY	31290	SENW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-06857	CASCADE CREEK	629-1	GRAND VALLEY	31290	SWSW 29 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10336	CASCADE CREEK	632-21-41	GRAND VALLEY	31290	LOT 3 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13497	CASCADE CREEK	632-13-22	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11770	CASCADE CREEK	697-32-18D	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11769	CASCADE CREEK	697-32-09D	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11768	CASCADE CREEK	697-29-60D	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11766	CASCADE CREEK	697-32-12D	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11767	CASCADE CREEK	697-29-58D	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13291	CASCADE CREEK	697-32-01D	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13292	CASCADE CREEK	697-32-03D	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13290	CASCADE CREEK	697-32-10D	GRAND VALLEY	31290	LOT 4 32 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16838	LW	796-16-14B	WILDCAT	99999	NWNE 16 7S 96W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16837	LW	796-17-30A	WILDCAT	99999	SENE 17 7S 96W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14202	LOGAN WASH	796-17-53A	WILDCAT	99999	SESW 17 7S 96W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10934	LOGAN WASH	796-18-61	GRAND VALLEY	31290	SWSE 18 7S 96W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10935	LOGAN WASH	796-19-03	GRAND VALLEY	31290	NENW 19 7S 96W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14203	LOGAN WASH	796-19-13B	WILDCAT	99999	NWNE 19 7S 96W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16159	SHELL	797-03-21B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17890	SHELL	797-03-23A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17884	SHELL	697-34-16B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17879	SHELL	697-34-16A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17882	SHELL	797-03-15B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17878	SHELL	797-03-15A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17767	SHELL	697-34-08B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17764	SHELL	697-34-08A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17766	SHELL	797-03-06B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17765	SHELL	797-03-06A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17885	SHELL	797-03-39B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17886	SHELL	797-03-39A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17887	SHELL	797-03-38	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17888	SHELL	797-03-37	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17889	SHELL	797-03-31B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17883	SHELL	797-03-31A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17892	SHELL	797-03-29B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17881	SHELL	797-03-29A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17891	SHELL	797-03-23B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17585	SHELL	697-34-14A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17584	SHELL	697-34-14B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17586	SHELL	697-34-22A	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17587	SHELL	697-34-22B	GRAND VALLEY	31290	NWNE 3 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13701	CASCADE CREEK	797-5-31DB	GRAND VALLEY	31290	NESE 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13702	CASCADE CREEK	797-5-31DA	GRAND VALLEY	31290	NESE 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13703	CASCADE CREEK	797-5-29D	GRAND VALLEY	31290	NESE 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10509	CASCADE CREEK	797-05-36	GRAND VALLEY	31290	NESW 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10345	CASCADE CREEK	705-22-43	GRAND VALLEY	31290	SENW 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11928	CASCADE CREEK	797-05-12D	GRAND VALLEY	31290	SENW 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11960	CASCADE CREEK	797-05-14DA	GRAND VALLEY	31290	SENW 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10346	CASCADE CREEK	705-24-44	GRAND VALLEY	31290	SESW 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10512	CASCADE CREEK	797-05-52	GRAND VALLEY	31290	SESW 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes

05-045-12008	CASCADE CREEK	797-5-62D	GRAND VALLEY	31290	SESW 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12011	CASCADE CREEK	797-5-61D	GRAND VALLEY	31290	SESW 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11962	CASCADE CREEK	797-5-55D	GRAND VALLEY	31290	TRACT 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11963	CASCADE CREEK	797-05-45D	GRAND VALLEY	31290	TRACT 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11961	CASCADE CREEK	797-05-06DB	GRAND VALLEY	31290	TRACT 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11927	CASCADE CREEK	797-05-06DA	GRAND VALLEY	31290	TRACT 5 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14444	CASCADE CREEK	797-06-22D	WILDCAT	99999	NENE 6 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15063	CASCADE CREEK	797-06-07	WILDCAT	99999	NENE 6 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15061	CASCADE CREEK	797-06-05A	WILDCAT	99999	NENE 6 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15062	CASCADE CREEK	797-06-03	WILDCAT	99999	NENE 6 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10258	OXY FEDERAL	708-11	GRAND VALLEY	31290	LOT 2 8 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11172	OXY FEDERAL	797-08-19D	GRAND VALLEY	31290	SESW 8 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11171	OXY FEDERAL	797-8-51D	GRAND VALLEY	31290	SWSW 8 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14926	SHELL	797-09-37A	WILDCAT	99999	NENW 9 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15233	SHELL	797-09-29A	WILDCAT	99999	NENW 9 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15731	SHELL	797-09-29B	WILDCAT	99999	NENW 9 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13794	SHELL	797-09-12	WILDCAT	99999	NENW 9 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12399	SHELL	797-14-01D	GRAND VALLEY	31290	NWNW 14 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14840	OXY FEDERAL	797-17-56A	WILDCAT	99999	SESE 17 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15039	OXY FEDERAL	797-19-21	WILDCAT	99999	SWNE 19 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15038	OXY FEDERAL	797-20-44A	WILDCAT	99999	SESW 20 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10930	LOGAN WASH	797-23-16	GRAND VALLEY	31290	NENE 23 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13795	LOGAN WASH	797-23-45AX	WILDCAT	99999	NWSE 23 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14049	LOGAN WASH	797-23-45A	WILDCAT	99999	SESW 23 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11167	LOGAN WASH	797-24-47D	GRAND VALLEY	31290	NESE 24 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11337	LOGAN WASH	797-25-20	WILDCAT	99999	SESW 25 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14100	SHELL	797-27-13A	WILDCAT	99999	NWNE 27 7S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes

API NUMBER	WELL NAME	WELL NO.	FIELD	OGCC Lease Number	LOCATION	Operator Name	Operator Number	Producing Formation	Analysis Attached	Transported to disposal site via:	TDS	Add Source
05-077-09094	ANDERSON	7-11	PLATEAU	69300	NWSW 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09105	ANDERSON	7-14	PLATEAU	69300	NWSW 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09106	ANDERSON	7-13	PLATEAU	69300	NWSW 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09107	ANDERSON	7-12	PLATEAU	69300	NWSW 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09107	ANDERSON	7-3A	PLATEAU	69300	SESW 7 0S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08219	ANDERSON RANCHES	7-3	PLATEAU	69300	SWSW 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-10954	BALDY CREEK FEDERAL	31-3	WILDCAT	99999	NENW 31 6S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08968	BLACKMAN	14-14	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08969	BLACKMAN	14-13	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08970	BLACKMAN	14-12	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08971	BLACKMAN	14-6	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08972	BLACKMAN	14-5	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08985	BLACKMAN	23-4	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08986	BLACKMAN	23-3	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08987	BLACKMAN	22-1	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09004	BLACKMAN	15-9	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09005	BLACKMAN	15-8	BRUSH CREEK	7562	NWSW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08401	BRADSHAW-DOLLEY	36-3	PLATEAU	69300	NESW 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08696	BRUSH CREEK RANCH	14-10	BRUSH CREEK	7562	NWSE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08841	BRUSH CREEK RANCH	14-16	BRUSH CREEK	7562	NWSE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08842	BRUSH CREEK RANCH	14-11	BRUSH CREEK	7562	NWSE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08860	BRUSH CREEK RANCH	14-15	BRUSH CREEK	7562	NWSE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08992	CAMPBELL	18-11	PLATEAU	69300	NESW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08993	CAMPBELL	18-13	PLATEAU	69300	NESW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08994	CAMPBELL	18-14	PLATEAU	69300	NESW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08995	CAMPBELL	18-12	PLATEAU	69300	NESW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09890	COURY	18-2C	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09891	COURY	18-1B	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09892	COURY	18-1C	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09893	COURY	18-1D	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09894	COURY	18-2A	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09895	COURY	18-2B	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09173	CURREY	16-7	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09174	CURREY	16-10	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09175	CURREY	16-2	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09176	CURREY	16-9	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09198	CURREY	16-11	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09199	CURREY	16-14	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09200	CURREY	16-15	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09201	CURREY	21-2	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09202	CURREY	21-4	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09469	CURREY	16-15A	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09477	CURREY	16-15C	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09478	CURREY	21-2A	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09479	CURREY	16-15B	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09539	CURREY	16-9A	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09540	CURREY	16-10A	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09541	CURREY	16-10C	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09542	CURREY	16-10B	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09543	CURREY	16-9B	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09544	CURREY	16-2B	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09545	CURREY	16-2C	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09546	CURREY	16-7B	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09547	CURREY	16-7A	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09548	CURREY	16-2A	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09549	CURREY	16-7C	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09638	CURREY	16-11A	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes

05-077-09639	CURREY	16-11B	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09640	CURREY	16-11C	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09641	CURREY	16-14B	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09642	CURREY	21-2B	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09643	CURREY	21-2C	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09645	CURREY	16-14A	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09660	CURREY	16-9C	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09704	CURREY	16-14C	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09172	CURREY FEDERAL	16-6	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09577	CURREY FEDERAL	16-6A	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09578	CURREY FEDERAL	16-6B	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09579	CURREY FEDERAL	16-6C	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09095	CURRIER	26-15	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09096	CURRIER	26-16	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09097	CURRIER	26-14	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09098	CURRIER	26-10	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09099	CURRIER	26-9C	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09100	CURRIER	35-2	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09101	CURRIER	35-1	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09102	CURRIER	25-13	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09103	CURRIER	35-3	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09104	CURRIER	36-4	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09184	DAVID	23-6	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09185	DAVID	23-2	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09186	DAVID	23-11	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09187	DAVID	23-10	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09188	DAVID	23-7	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09189	DAVID	23-5	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09203	DAVID	23-1	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09204	DAVID	23-8	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09205	DAVID	23-9	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09206	DAVID	23-12	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09453	DAVID	23-7C	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09454	DAVID	23-7B	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09455	DAVID	23-7A	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09456	DAVID	23-2B	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09457	DAVID	23-2C	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09458	DAVID	23-2A	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09207	DAVID FED.	23-15	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08422	DAVIS-DOLLEY	36-1	PLATEAU	69300	NWNE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08563	DEEP SEAM 30-4	2	BUZZARD	9495	NESE 30 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08579	DEEP SEAM 30-4	3	BUZZARD	9495	SESE 30 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08391	DOLLEY	6-2	PLATEAU	69300	SWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08900	ESPERANZA	8-6	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08912	ESPERANZA	8-10	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08913	ESPERANZA	8-5	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08914	ESPERANZA FEDERAL	8-2	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08915	ESPERANZA FEDERAL	8-3	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08916	ESPERANZA FEDERAL	8-7	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08797	ESPERANZA RANCH	2	PLATEAU	69300	NENE 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08974	ESPERANZA RANCH	9-5	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08976	ESPERANZA RANCH	5-16	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08977	ESPERANZA RANCH	4-13	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08978	ESPERANZA RANCH	8-8	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08980	ESPERANZA RANCH	9-4	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09034	GIPP	13-8	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09035	GIPP	13-9	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09036	GIPP	13-16	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09039	GIPP	13-7	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09040	GIPP	13-10	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes

05-077-09041	GIPP	13-15	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09580	GIPP	18-14B	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09583	GIPP	18-14A	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09585	GIPP	18-14	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09587	GIPP	18-12C	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09588	GIPP	18-12B	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09589	GIPP	18-12	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09590	GIPP	18-12A	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09591	GIPP	18-13A	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09592	GIPP	18-13	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09593	GIPP	18-13B	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09674	GIPP	18-14C	BRUSH CREEK	7562	NESW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09675	GIPP	18-13C	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08573	GRIFFITH	14-2	BRUSH CREEK	7562	NWNE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08833	GRIFFITH	11-1	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08834	GRIFFITH	11-2	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08835	GRIFFITH	11-7	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09480	GRIFFITH	11-1C	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09481	GRIFFITH	11-1B	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09511	GRIFFITH	11-8B	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09512	GRIFFITH	11-8A	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09676	GRIFFITH	11-7A	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09677	GRIFFITH	11-7B	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09678	GRIFFITH	11-2C	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09679	GRIFFITH	11-2B	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09680	GRIFFITH	11-1A	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09681	GRIFFITH	11-2A	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09682	GRIFFITH	11-7C	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09683	GRIFFITH	11-8C	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08693	GUNDERSON	12-10B	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08697	GUNDERSON	12-10A	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08858	GUNDERSON	12-6	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08861	GUNDERSON	12-11	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08862	GUNDERSON	12-15	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-09082	GUNDERSON FED.	13-2	BRUSH CREEK	7562	SESW 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09181	GUNDERSON FED.	18-4	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09887	GUNDERSON FEDERAL	18-4A	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09888	GUNDERSON FEDERAL	18-4B	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09889	GUNDERSON FEDERAL	18-4C	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09182	GUNDERSON FED.	13-1	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08839	GUNDERSON FEDERAL	12-7	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08869	GUNDERSON FEDERAL	12-16	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08678	GUNDERSON-FEDERAL	12-2	BRUSH CREEK	7562	NWNE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09333	HAWKINS RANCH	10-2	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09337	HAWKINS RANCH	10-4	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09338	HAWKINS RANCH	3-13	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09339	HAWKINS RANCH	10-3	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09482	HAWKINS RANCH	10-8C	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09483	HAWKINS RANCH	10-9	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09484	HAWKINS RANCH	10-9A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09485	HAWKINS RANCH	10-8B	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09486	HAWKINS RANCH	10-7C	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09487	HAWKINS RANCH	10-7B	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09488	HAWKINS RANCH	10-6	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09489	HAWKINS RANCH	10-7A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09490	HAWKINS RANCH	10-7	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09491	HAWKINS RANCH	10-6B	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09492	HAWKINS RANCH	10-6A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09493	HAWKINS RANCH	10-10A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09494	HAWKINS RANCH	10-10	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09495	HAWKINS RANCH	10-8	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09537	HAWKINS RANCH	10-6C	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09538	HAWKINS RANCH	10-8A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09617	HAWKINS RANCH	3-13A	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09618	HAWKINS RANCH	3-13B	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09619	HAWKINS RANCH	3-13C	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09620	HAWKINS RANCH	10-2A	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09621	HAWKINS RANCH	10-3A	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09622	HAWKINS RANCH	10-2C	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09623	HAWKINS RANCH	10-3B	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09624	HAWKINS RANCH	10-3C	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09625	HAWKINS RANCH	10-4A	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09626	HAWKINS RANCH	10-2B	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09693	HAWKINS RANCH	10-4B	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09694	HAWKINS RANCH	10-4C	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09807	HAWKINS RANCH	14-3A	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09883	HAWKINS RANCH	15-1A	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09882	HAWKINS RANCH	10-16B	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09884	HAWKINS RANCH	10-16C	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09885	HAWKINS RANCH	11-13C	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
	HAWKINS RANCH	14-5A	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09267	HELLS GULCH FED	23-11C	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09275	HELLS GULCH FED	26-4C	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09299	HELLS GULCH FED	24-5	WILDCAT	99999	SWNW 24 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09300	HELLS GULCH FED	24-5A	WILDCAT	99999	SWNW 24 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09301	HELLS GULCH FED	24-5B	WILDCAT	99999	SWNW 24 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09302	HELLS GULCH FED	23-10	WILDCAT	99999	SWNW 24 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09304	HELLS GULCH FED	26-16	ALKALI CREEK	1950	NESW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09264	HELLS GULCH FED.	23-11B	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09265	HELLS GULCH FED.	23-14A	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09266	HELLS GULCH FED.	23-14B	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09269	HELLS GULCH FED.	23-12B	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09270	HELLS GULCH FED.	23-12C	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09271	HELLS GULCH FED.	23-11A	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-09272	HELLS GULCH FED.	26-3C	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09273	HELLS GULCH FED.	26-4A	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09274	HELLS GULCH FED.	26-4B	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09276	HELLS GULCH FED.	26-5A	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09277	HELLS GULCH FED.	26-5B	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09278	HELLS GULCH FED.	26-3A	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09279	HELLS GULCH FED.	26-3B	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09303	HELLS GULCH FED.	26-9C	ALKALI CREEK	1950	NESW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09305	HELLS GULCH FED.	26-16A	ALKALI CREEK	1950	NESW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09306	HELLS GULCH FED.	26-10C	ALKALI CREEK	1950	NESW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09392	HELLS GULCH FED.	23-15	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09393	HELLS GULCH FED.	26-2C	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09394	HELLS GULCH FED.	26-2B	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09395	HELLS GULCH FED.	26-2A	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09396	HELLS GULCH FED.	23-15C	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09397	HELLS GULCH FED.	23-15B	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09398	HELLS GULCH FED.	23-15A	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09399	HELLS GULCH FED.	25-5	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08798	HELLS GULCH FEDERAL	2-2	ALKALI CREEK	1950	NWNE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08873	HELLS GULCH FEDERAL	2-16	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08874	HELLS GULCH FEDERAL	2-15	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08875	HELLS GULCH FEDERAL	2-10	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08876	HELLS GULCH FEDERAL	2-9	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08878	HELLS GULCH FEDERAL	2-8	ALKALI CREEK	1950	NWNE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08879	HELLS GULCH FEDERAL	2-1	ALKALI CREEK	1950	NWNE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08888	HELLS GULCH FEDERAL	23-13	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08889	HELLS GULCH FEDERAL	23-14	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08890	HELLS GULCH FEDERAL	23-12	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08891	HELLS GULCH FEDERAL	23-11	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08892	HELLS GULCH FEDERAL	25-12	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08893	HELLS GULCH FEDERAL	26-11	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08894	HELLS GULCH FEDERAL	26-2	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08895	HELLS GULCH FEDERAL	26-6	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08896	HELLS GULCH FEDERAL	24-13	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08897	HELLS GULCH FEDERAL	26-5	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08898	HELLS GULCH FEDERAL	26-4	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08899	HELLS GULCH FEDERAL	26-3	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08962	HELLS GULCH FEDERAL	2-7	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09268	HELLS GULCH FEDERAL	23-12A	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09656	HELLS GULCH FEDERAL	23-13C	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09657	HELLS GULCH FEDERAL	23-14C	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09658	HELLS GULCH FEDERAL	23-13B	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09659	HELLS GULCH FEDERAL	23-13A	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09376	HELL'S GULCH FEDERAL	1-12	PLATEAU	69300	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09377	HELL'S GULCH FEDERAL	2-11	PLATEAU	69300	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09156	HIDDEN CREEK WEST FED	23-2	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09152	HIDDEN CREEK WEST FED.	23-3	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09153	HIDDEN CREEK WEST FED.	23-6	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09154	HIDDEN CREEK WEST FED.	23-7	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09155	HIDDEN CREEK WEST FED.	23-5	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09157	HIDDEN CREEK WEST FED.	23-4	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09158	HIDDEN CREEK WEST FED.	23-1	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09262	HIDDEN CREEK WEST FED.	23-3A	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09263	HIDDEN CREEK WEST FED.	23-3B	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09728	HIGHTOWER FEDERAL	21-3	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09729	HIGHTOWER FEDERAL	21-8	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09730	HIGHTOWER FEDERAL	21-7	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09731	HIGHTOWER FEDERAL	21-6	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09732	HIGHTOWER FEDERAL	21-1	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09733	HIGHTOWER FEDERAL	21-4	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-09734	HIGHTOWER FEDERAL	21-2	WILDCAT	99999	NWNE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09735	HIGHTOWER FEDERAL	21-16	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09736	HIGHTOWER FEDERAL	21-9	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09737	HIGHTOWER FEDERAL	21-15	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09738	HIGHTOWER FEDERAL	21-14	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09739	HIGHTOWER FEDERAL	21-11	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09740	HIGHTOWER FEDERAL	21-10	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09741	HIGHTOWER FEDERAL	20-4	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09742	HIGHTOWER FEDERAL	20-7	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09743	HIGHTOWER FEDERAL	20-2	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09744	HIGHTOWER FEDERAL	20-5	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09745	HIGHTOWER FEDERAL	20-6	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09746	HIGHTOWER FEDERAL	20-3	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09747	HIGHTOWER FEDERAL	20-11	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09748	HIGHTOWER FEDERAL	20-10	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09749	HIGHTOWER FEDERAL	20-12	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09750	HIGHTOWER FEDERAL	20-13	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09751	HIGHTOWER FEDERAL	20-14	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09752	HIGHTOWER FEDERAL	20-15	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08460	KENAI LATHAM	25-41	SHIRE GULCH	77450	NENE 25 9S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09065	LARAMIE LAND & CATTLE	36-14A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09062	LARAMIE LAND & CATTLE CO	36-10A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09064	LARAMIE LAND & CATTLE CO	36-10	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09067	LARAMIE LAND & CATTLE CO	36-8A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09068	LARAMIE LAND & CATTLE CO	36-8	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09069	LARAMIE LAND & CATTLE CO	36-7	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09066	LARAMIE LAND & CATTLE CO	36-9	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09431	LARAMIE LAND & CATTLE COMPANY	17-4A	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09432	LARAMIE LAND & CATTLE COMPANY	17-5	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09433	LARAMIE LAND & CATTLE COMPANY	17-5B	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09435	LARAMIE LAND & CATTLE COMPANY	17-4C	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09436	LARAMIE LAND & CATTLE COMPANY	17-5A	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09437	LARAMIE LAND & CATTLE COMPANY	17-4B	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09209	LARAMIE LAND & CATTLE CO	36-11A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09422	LARAMIE LAND&CATTLE CO	17-3C	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09424	LARAMIE LAND&CATTLE CO	17-3A	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09425	LARAMIE LAND&CATTLE CO	17-4	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09426	LARAMIE LAND&CATTLE CO	17-3	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09427	LARAMIE LAND&CATTLE CO	17-6	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09428	LARAMIE LAND&CATTLE CO	17-6A	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09429	LARAMIE LAND&CATTLE CO	17-6B	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09434	LARAMIE LAND&CATTLE CO	17-5C	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09063	LARAMIE LAND&CATTLE CO	36-14	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09430	LARAMIE LAND&CATTLE CO	17-6C	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09212	LARAMIE LAND&CATTLE CO	36-9A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09213	LARAMIE LAND&CATTLE CO	36-11	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09208	LARAMIE LAND&CATTLE CO	36-15	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09210	LARAMIE LAND&CATTLE CO	36-7A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09211	LARAMIE LAND&CATTLE CO.FED	31-12	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09423	LARAMINE LAND&CATTLE CO	17-3B	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10972	LOGAN TRAIL FED.	28-9	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10974	LOGAN TRAIL FED.	28-15	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10977	LOGAN TRAIL FED.	28-16	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10973	LOGAN TRAIL FEDERAL	28-7	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10975	LOGAN TRAIL FEDERAL	28-11	GRAND VALLEY		NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10976	LOGAN TRAIL FEDERAL	28-10	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08818	MC DANIEL	11-8	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08566	MCDANIEL	11-10	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08815	MCDANIEL	11-16	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08817	MCDANIEL	11-9	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-08882	MCDANIEL	14-8	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08883	MCDANIEL	14-7	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08902	MCDANIEL	2-15	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08903	MCDANIEL	2-16	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08904	MCDANIEL	2-10	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08905	MCDANIEL	13-4	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08906	MCDANIEL	2-9	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08907	MCDANIEL	14-1	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08908	MCDANIEL	2-6	BRUSH CREEK	7562	NENW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08909	MCDANIEL	2-5	BRUSH CREEK	7562	NENW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08910	MCDANIEL	2-4	BRUSH CREEK	7562	NENW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08911	MCDANIEL	2-3	BRUSH CREEK	7562	NENW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08935	MCDANIEL	2-8	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08936	MCDANIEL	2-7	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08938	MCDANIEL	2-1	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08957	MCDANIEL	11-15	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09110	MCDANIEL	11-11	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09118	MCDANIEL	11-14	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09340	MCDANIEL	2-18	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09341	MCDANIEL	2-1A	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09342	MCDANIEL	2-1C	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09343	MCDANIEL	2-2A	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09344	MCDANIEL	2-2B	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09345	MCDANIEL	2-2C	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09346	MCDANIEL	2-8B	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09347	MCDANIEL	2-8A	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09348	MCDANIEL	2-7B	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09349	MCDANIEL	2-7A	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09378	MCDANIEL	2-8C	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09379	MCDANIEL	2-7C	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09404	MCDANIEL	2-16A	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09405	MCDANIEL	2-16B	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09406	MCDANIEL	2-16C	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09407	MCDANIEL	2-15A	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09408	MCDANIEL	2-15B	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09409	MCDANIEL	2-15C	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09410	MCDANIEL	2-9B	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09411	MCDANIEL	2-9C	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09412	MCDANIEL	2-10A	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09413	MCDANIEL	2-10B	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09414	MCDANIEL	2-10C	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09415	MCDANIEL	2-9A	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09502	MCDANIEL	11-14B	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09556	MCDANIEL	11-11A	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09557	MCDANIEL	11-11C	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09558	MCDANIEL	11-11B	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09561	MCDANIEL	11-14A	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09595	MCDANIEL	14-6A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09119	MCDANIEL	15-1	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09596	MCDANIEL	15-1A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09597	MCDANIEL	15-1B	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09598	MCDANIEL	15-1C	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09599	MCDANIEL	14-3B	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09600	MCDANIEL	14-3A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09601	MCDANIEL	14-3C	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09602	MCDANIEL	14-5A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09603	MCDANIEL	14-4C	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09604	MCDANIEL	14-4B	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09605	MCDANIEL	14-4A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09606	MCDANIEL	11-14C	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes

05-077-09646	MCDANIEL	11-10B	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09647	MCDANIEL	11-15B	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09648	MCDANIEL	11-15A	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09649	MCDANIEL	11-10A	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09650	MCDANIEL	11-10C	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09651	MCDANIEL	11-16B	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09652	MCDANIEL	11-16A	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09653	MCDANIEL	11-15C	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09654	MCDANIEL	11-9C	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09655	MCDANIEL	11-9B	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09709	MCDANIEL	11-9A	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-19074	MCDANIEL	2-11	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09111	MCDANIEL FED.	11-13	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09112	MCDANIEL FED.	11-5	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09113	MCDANIEL FED.	11-6	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09114	MCDANIEL FED.	11-12	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08956	MCDANIEL FEDERAL	12-13	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09071	MCDANIEL FEDERAL	2-12	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09072	MCDANIEL FEDERAL	2-13	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09073	MCDANIEL FEDERAL	2-14	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09120	MCDANIEL FEDERAL	11-4	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09121	MCDANIEL FEDERAL	11-3	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09257	MCDANIEL FEDERAL	1-4.5	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08559	MCDANIEL FEDERAL	11-12C	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09560	MCDANIEL FEDERAL	11-13C	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09573	MCDANIEL FEDERAL	11-13B	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09574	MCDANIEL FEDERAL	11-12A	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09575	MCDANIEL FEDERAL	11/13A	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09576	MCDANIEL FEDERAL	11-12B	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08828	MCELWAIN	12-4	BRUSH CREEK	7562	SWNW 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08837	MCELWAIN	12-12	BRUSH CREEK	7562	SWNW 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09086	MITCHELL	32-3	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09108	MITCHELL	32-6	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09085	MITCHELL FED.	32-4	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09087	MITCHELL FED.	32-11	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09088	MITCHELL FED.	32-12	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09109	MITCHELL FED.	32-5	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11296	MONTOVER	30-15	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11408	MONTOVER	30-8	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11409	MONTOVER	30-9	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11410	MONTOVER	30-10	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11411	MONTOVER	30-16	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11356	MONTOVER FEDERAL	30-11	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11357	MONTOVER FEDERAL	30-6	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11358	MONTOVER FEDERAL	30-14	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08810	MY WAY RANCH	8-12	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08811	MY WAY RANCH	17-7	PLATEAU	69300	SWNE 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08813	MY WAY RANCH	8-4	PLATEAU	69300	NWNW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	20606	Yes
05-077-08820	MY WAY RANCH	16-13	PLATEAU	69300	SWSE 16 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08822	MY WAY RANCH	1-1	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08851	MY WAY RANCH	16-11	PLATEAU	69300	SWSE 16 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08870	MY WAY RANCH	8-14	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08871	MY WAY RANCH	8-11	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08943	MY WAY RANCH	17-8	PLATEAU	69300	SWNE 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08952	MY WAY RANCH	7-1A	PLATEAU	69300	SENE 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08953	MY WAY RANCH	7-2	PLATEAU	69300	SENE 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08954	MY WAY RANCH	7-7	PLATEAU	69300	SENE 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08988	MY WAY RANCH	6-4	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08989	MY WAY RANCH	18-6	PLATEAU	69300	SWNW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08990	MY WAY RANCH	18-3	PLATEAU	69300	SWNW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08991	MY WAY RANCH	18-4	PLATEAU	69300	SWNW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	21923	Yes

05-077-08996	MY WAY RANCH	18-8	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08997	MY WAY RANCH	18-7	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08998	MY WAY RANCH	18-2	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08999	MY WAY RANCH	36-16	PLATEAU	69300	NWNNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09047	MY WAY RANCH	18-5	PLATEAU	69300	SWNW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09048	MY WAY RANCH	18-1A	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09070	MY WAY RANCH	1-8	PLATEAU	69300	NWNNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08866	MY WAY RANCH 8-13	0	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08955	MY WAY RANCH FED.	17-1	PLATEAU	69300	SWNE 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09016	MY WAY RANCH FED.	6-11	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09017	MY WAY RANCH FED.	31-14	PLATEAU	69300	NWNNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09018	MY WAY RANCH FED.	6-6	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09019	MY WAY RANCH FED.	6-8	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09020	MY WAY RANCH FED.	6-9	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09021	MY WAY RANCH FED.	6-10	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09022	MY WAY RANCH FED.	6-2	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09023	MY WAY RANCH FED.	6-7	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09024	MY WAY RANCH FED.	6-12	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09025	MY WAY RANCH FED.	6-14	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09026	MY WAY RANCH FED.	6-15	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08819	MY WAY RANCH FEDERAL	31-13	PLATEAU	69300	NWNNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08821	MY WAY RANCH FEDERAL	6-16	PLATEAU	69300	NWNNW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08859	MY WAY RANCH FEDERAL	6-3	PLATEAU	69300	NWNNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08887	MY WAY RANCH FEDERAL	8-15	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09075	MY WAY RANCH FEDERAL	5-14	PLATEAU	69300	NWNNW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09076	MY WAY RANCH FEDERAL	5-13	PLATEAU	69300	NWNNW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09226	NICHOLS	24-12	BRUSH CREEK	7562	SESW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09227	NICHOLS	24-10	BRUSH CREEK	7562	SESW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09228	NICHOLS	24-6	BRUSH CREEK	7562	SESW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09229	NICHOLS	24-3	BRUSH CREEK	7562	SESW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09230	NICHOLS	24-4	BRUSH CREEK	7562	SESW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09231	NICHOLS	24-5	BRUSH CREEK	7562	SESW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09232	NICHOLS	24-11	BRUSH CREEK	7562	SESW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08959	RED MOUNTAIN RANCH	4-4	PLATEAU	69300	SESW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08960	RED MOUNTAIN RANCH	4-3	PLATEAU	69300	SESW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08964	RED MOUNTAIN RANCH	4-5	PLATEAU	69300	SESW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08965	RED MOUNTAIN RANCH	4-6	PLATEAU	69300	SESW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08967	RED MOUNTAIN RANCH	4-12	PLATEAU	69300	SESW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09233	RED MOUNTAIN RANCH	33-15	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09234	RED MOUNTAIN RANCH	33-14	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09235	RED MOUNTAIN RANCH	4-2	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09236	RED MOUNTAIN RANCH	33-13	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09237	RED MOUNTAIN RANCH	33-11	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08966	REM MOUNTAIN RANCH	4-11	PLATEAU	69300	SESW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08243	SPARKS	36-4	PLATEAU	69300	SWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09364	STITES	21-5B	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09365	STITES	21-5A	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09366	STITES	21-6	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09367	STITES	21-5C	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09520	STITES	20-7B	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09521	STITES	20-7C	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09522	STITES	20-7A	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09523	STITES	20-1B	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09524	STITES	21-4B	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09525	STITES	21-4A	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09526	STITES	21-4C	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09527	STITES	20-1A	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09723	STITES	20-8C	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09724	STITES	20-8B	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09725	STITES	20-8A	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-09726	STITES	20-1	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09727	STITES	20-1C	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08444	TEXACO-STARNER	26-32	WILDCAT	99999	SWNE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11107	TRISCH/LASHLEY	32-5	WILDCAT	99999	SWNW 32 6S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11244	TRISCH/LASHLEY	31-9	WILDCAT	99999	SWNW 32 6S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11245	TRISCH/LASHLEY	31-8	WILDCAT	99999	SWNW 32 6S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11258	TUGUVU-N	3-7	WILDCAT	99999	SENW 3 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11366	TUGUVU-N	3-6	WILDCAT	99999	SENW 3 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11367	TUGUVU-N	3-5	WILDCAT	99999	SENW 3 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09137	UTE WATER	36-12	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09138	UTE WATER	35-9	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09139	UTE WATER	35-8	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09140	UTE WATER	36-5	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09141	UTE WATER	35-15	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09142	UTE WATER	36-13	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09143	UTE WATER	35-16	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09144	UTE WATER	27-3	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09145	UTE WATER	27-2	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09146	UTE WATER	22-15	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09147	UTE WATER	22-14	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09148	UTE WATER	22-13	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09149	UTE WATER	22-12	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09150	UTE WATER	22-11	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09151	UTE WATER	22-10	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09222	UTE WATER	27-10	BRUSH CREEK	7562	NESW 27 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09223	UTE WATER	27-15	BRUSH CREEK	7562	NESW 27 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09224	UTE WATER	27-11	BRUSH CREEK	7562	NESW 27 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09225	UTE WATER	27-6	BRUSH CREEK	7562	NESW 27 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09162	WOODS-SPANGLER	22-4	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09163	WOODS-SPANGLER	21-1	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09164	WOODS-SPANGLER	15-14	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09165	WOODS-SPANGLER	15-13	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09166	WOODS-SPANGLER	15-12	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09167	WOODS-SPANGLER	15-11	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09214	WOODS-SPANGLER	16-16	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



RECEIVED

APR 27 2009

COGCC

Complete the
Attachment Checklist

SOURCE OF PRODUCED WATER FOR DISPOSAL

This form must be completed for any new disposal site and for any change in sources of produced water for an existing disposal site.

OGCC Operator Number: <u>66561</u>	Contact Name and Telephone: <u>Blair K. Rollins</u>
Name of Operator: <u>OXY USA Inc.</u>	No: <u>(970) 263-3629</u>
Address: <u>P.O. Box 4294</u>	Fax: <u>(970) 263-3694</u>
City: <u>Houston</u> State: <u>TX</u> Zip: <u>77210</u>	
OGCC Disposal Facility Number: <u>159275</u>	
Operator's Disposal Facility Name: <u>Logan Trail 28-10 SWD</u> Operator's Disposal Facility Number: <u>28-10</u>	
Location (QtrQtr, Sec, Twp, Rng, Meridian): <u>NESE, 28, T7S, R97W, 6th PM</u>	
Address: <u>760 Horizon Drive, Suite 101 (Mailing address)</u>	
City: <u>Grand Junction</u> State: <u>CO</u> Zip: <u>81506</u> County: <u>Garfield</u>	

Chemical Analysis of fluid	Oper OGCC

If more space is required,
attach additional sheet.

Add Source:	OGCC Lease No: _____	API No: <u>See Attached List</u>	Well Name & No: <u>See Attached List</u>
<input checked="" type="checkbox"/>	Operator Name: <u>OXY USA WTP LP</u>	Operator No: <u>66571</u>	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____
Add Source:	OGCC Lease No: _____	API No: <u>See attached list</u>	Well Name & No: <u>See attached list</u>
<input checked="" type="checkbox"/>	Operator Name: <u>OXY USA Inc.</u>	Operator No: <u>66561</u>	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____
Add Source:	OGCC Lease No: _____	API No: _____	Well Name & No: _____
<input type="checkbox"/>	Operator Name: _____	Operator No: _____	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____
Add Source:	OGCC Lease No: _____	API No: _____	Well Name & No: _____
<input type="checkbox"/>	Operator Name: _____	Operator No: _____	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____
Add Source:	OGCC Lease No: _____	API No: _____	Well Name & No: _____
<input type="checkbox"/>	Operator Name: _____	Operator No: _____	
Delete Source:	Location: QtrQtr: _____	Section: _____	Township: _____
<input type="checkbox"/>	Analysis Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Transported to disposal site via: <input type="checkbox"/> Pipeline <input type="checkbox"/> Truck	TDS: _____

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Blair K. Rollins

Signed: Blair K. Rollins

Title: Regulatory Analyst

Date: April 24, 2009

OGCC Approved: Denise M. Ouyshin

Title: UIC Program Administrator 7-16-09

CONDITIONS OF APPROVAL, IF ANY:

API NUMBER	WELL NAME	WELL NO.	FIELD	OGCC Lease Number	LOCATION	Operator Name	Operator Number	Producing Formation	Analysis Attached	Transported to disposal site via:	TDS	Add Source
05-045-10856	Cascade Creek	603-23-32	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12412	CASCADE CREEK	697-3-51D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12400	CASCADE CREEK	697-03-67D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12409	CASCADE CREEK	697-3-73D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12410	CASCADE CREEK	697-3-75D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12411	CASCADE CREEK	697-10-2D	GRAND VALLEY	31290	NESW 3 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12404	CASCADE CREEK	697-3-25D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12405	CASCADE CREEK	697-3-41D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12406	CASCADE CREEK	697-4-29D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12407	CASCADE CREEK	697-4-39D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12408	CASCADE CREEK	697-4-54D	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10754	CASCADE CRK	604-41-32	GRAND VALLEY	31290	LOT 12 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-13465	CASCADE CREEK	604-12-13	GRAND VALLEY	31290	LOT 16 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10185	CASCADE CREEK	604-44	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12402	CASCADE CREEK	697-3-57D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12401	CASCADE CREEK	697-4-56D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12414	CASCADE CREEK	697-4-62D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12413	CASCADE CREEK	697-4-78D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12403	CASCADE CREEK	697-4-88D	GRAND VALLEY	31290	NESE 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10194	OXY FEDERAL	604-11	GRAND VALLEY	31290	NWNW 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11772	CASCADE CREEK	697-04-52	GRAND VALLEY	31290	SESW 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-06871	CASCADE CREEK	604-1	GRAND VALLEY	31290	SWSW 4 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10676	CASCADE CREEK	697-5-14	GRAND VALLEY	31290	LOT 11 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07522	CASCADE CREEK	605-23	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12457	CASCADE CREEK	697-5-50DB	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12454	CASCADE CREEK	697-5-59D	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12453	CASCADE CREEK	697-5-60D	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12456	CASCADE CREEK	697-5-67D	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12455	CASCADE CREEK	697-5-50DA	GRAND VALLEY	31290	NESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07210	CASCADE CREEK	605-2	GRAND VALLEY	31290	NWSE 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10547	CASCADE CREEK	605-13-22	GRAND VALLEY	31290	NWSW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-06897	CASCADE CREEK	605-1	GRAND VALLEY	31290	SESW 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-11773	CASCADE CREEK	697-05-56	GRAND VALLEY	31290	SESE 5 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07519	CASCADE CREEK	608-41	GRAND VALLEY	31290	NENE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10653	CASCADE CREEK	608-43-31	GRAND VALLEY	31290	NESE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-10675	CASCADE CREEK	697-08-53	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12280	CASCADE CREEK	697-8-38DB	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12278	CASCADE CREEK	697-8-45D	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12277	CASCADE CREEK	697-8-46DA	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12276	CASCADE CREEK	697-8-46DB	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-12279	CASCADE CREEK	697-8-54DA	GRAND VALLEY	31290	SWSE 8 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07520	CASCADE CREEK	609-33	GRAND VALLEY	31290	NWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-06870	CASCADE CREEK	609-1	GRAND VALLEY	31290	NWSW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-07320	CASCADE CREEK	609-2	GRAND VALLEY	31290	SESW 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-17697	CASCADE CREEK	697-16-11B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-14298	CASCADE CREEK	697-9-60D	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15135	CASCADE CREEK	697-09-52A	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-15136	CASCADE CREEK	697-09-44B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16228	CASCADE CREEK	697-09-35C	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16225	CASCADE CREEK	697-09-37B	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes
05-045-16227	CASCADE CREEK	697-09-58	GRAND VALLEY	31290	SWSE 9 6S 97W	Oxy USA WTP LP	66571	WMFK-ILES	To be submitted	Truck		Yes

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05-077-09639	CURREY	16-11B	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09640	CURREY	16-11C	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09641	CURREY	16-14B	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09642	CURREY	21-2B	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09643	CURREY	21-2C	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09645	CURREY	16-14A	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09660	CURREY	16-9C	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09704	CURREY	16-14C	BRUSH CREEK	7562	SESW 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09172	CURREY FEDERAL	16-6	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09577	CURREY FEDERAL	16-6A	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09578	CURREY FEDERAL	16-6B	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09579	CURREY FEDERAL	16-6C	BRUSH CREEK	7562	NWSE 16 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09095	CURRIER	26-15	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09096	CURRIER	26-16	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09097	CURRIER	26-14	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09098	CURRIER	26-10	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09099	CURRIER	26-9C	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09100	CURRIER	35-2	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09101	CURRIER	35-1	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09102	CURRIER	25-13	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09103	CURRIER	35-3	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09104	CURRIER	36-4	BRUSH CREEK	7562	SWSE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09184	DAVID	23-6	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09185	DAVID	23-2	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09186	DAVID	23-11	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09187	DAVID	23-10	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09188	DAVID	23-7	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09189	DAVID	23-5	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09203	DAVID	23-1	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09204	DAVID	23-8	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09205	DAVID	23-9	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09206	DAVID	23-12	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09453	DAVID	23-7C	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09454	DAVID	23-7B	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09455	DAVID	23-7A	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09456	DAVID	23-2B	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09457	DAVID	23-2C	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09458	DAVID	23-2A	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09207	DAVID FED.	23-15	BRUSH CREEK	7562	SWNE 23 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08422	DAVIS-DOLLEY	36-1	PLATEAU	69300	NWNE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08563	DEEP SEAM 30-4	2	BUZZARD	9495	NESE 30 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08579	DEEP SEAM 30-4	3	BUZZARD	9495	SESE 30 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08391	DOLLEY	6-2	PLATEAU	69300	SWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08900	ESPERANZA	8-6	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08912	ESPERANZA	8-10	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08913	ESPERANZA	8-5	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08914	ESPERANZA FEDERAL	8-2	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08915	ESPERANZA FEDERAL	8-3	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08916	ESPERANZA FEDERAL	8-7	PLATEAU	69300	SENW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08797	ESPERANZA RANCH	2	PLATEAU	69300	NENE 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08974	ESPERANZA RANCH	9-5	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08976	ESPERANZA RANCH	5-16	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08977	ESPERANZA RANCH	4-13	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08978	ESPERANZA RANCH	8-8	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08980	ESPERANZA RANCH	9-4	PLATEAU	69300	SWNW 9 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09034	GIPP	13-8	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09035	GIPP	13-9	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09036	GIPP	13-16	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09039	GIPP	13-7	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09040	GIPP	13-10	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-09041	GIPP	13-15	BRUSH CREEK	7562	NESE 13 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09580	GIPP	18-14B	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09593	GIPP	18-14A	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09585	GIPP	18-14	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09587	GIPP	18-12C	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09588	GIPP	18-12B	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09589	GIPP	18-12	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09590	GIPP	18-12A	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09591	GIPP	18-13A	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09592	GIPP	18-13	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09593	GIPP	18-13B	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09674	GIPP	18-14C	BRUSH CREEK	7562	NESW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09675	GIPP	18-13C	BRUSH CREEK	7562	NWSW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08573	GRIFFITH	14-2	BRUSH CREEK	7562	NWNE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08833	GRIFFITH	11-1	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08834	GRIFFITH	11-2	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08835	GRIFFITH	11-7	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09480	GRIFFITH	11-1C	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09481	GRIFFITH	11-1B	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09511	GRIFFITH	11-8B	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09512	GRIFFITH	11-8A	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09676	GRIFFITH	11-7A	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09677	GRIFFITH	11-7B	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09678	GRIFFITH	11-2C	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09679	GRIFFITH	11-2B	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09680	GRIFFITH	11-1A	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09681	GRIFFITH	11-2A	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09682	GRIFFITH	11-7C	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09683	GRIFFITH	11-8C	BRUSH CREEK	7562	NWNE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08693	GUNDERSON	12-10B	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08697	GUNDERSON	12-10A	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08858	GUNDERSON	12-6	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08861	GUNDERSON	12-11	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08862	GUNDERSON	12-15	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-09082	GUNDERSON FED.	13-2	BRUSH CREEK	7562	SESW 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09181	GUNDERSON FED.	18-4	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09887	GUNDERSON FEDERAL	18-4A	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09888	GUNDERSON FEDERAL	18-4B	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09889	GUNDERSON FEDERAL	18-4C	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09182	GUNDERSON FED.	13-1	BRUSH CREEK	7562	SWNW 18 9S 93W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08839	GUNDERSON FEDERAL	12-7	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08869	GUNDERSON FEDERAL	12-16	BRUSH CREEK	7562	NWSE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08678	GUNDERSON FEDERAL	12-2	BRUSH CREEK	7562	NWNE 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09333	HAWKINS RANCH	10-2	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09337	HAWKINS RANCH	10-4	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09338	HAWKINS RANCH	3-13	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09339	HAWKINS RANCH	10-3	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09482	HAWKINS RANCH	10-8C	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09483	HAWKINS RANCH	10-9	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09484	HAWKINS RANCH	10-9A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09485	HAWKINS RANCH	10-8B	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09486	HAWKINS RANCH	10-7C	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09487	HAWKINS RANCH	10-7B	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09488	HAWKINS RANCH	10-6	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09489	HAWKINS RANCH	10-7A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09490	HAWKINS RANCH	10-7	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09491	HAWKINS RANCH	10-6B	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09492	HAWKINS RANCH	10-6A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09493	HAWKINS RANCH	10-10A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09494	HAWKINS RANCH	10-10	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09495	HAWKINS RANCH	10-8	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09537	HAWKINS RANCH	10-6C	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09538	HAWKINS RANCH	10-8A	PLATEAU	69300	NESE 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09617	HAWKINS RANCH	3-13A	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09618	HAWKINS RANCH	3-13B	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09619	HAWKINS RANCH	3-13C	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09620	HAWKINS RANCH	10-2A	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09621	HAWKINS RANCH	10-3A	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09622	HAWKINS RANCH	10-2C	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09623	HAWKINS RANCH	10-3B	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09624	HAWKINS RANCH	10-3C	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09625	HAWKINS RANCH	10-4A	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09626	HAWKINS RANCH	10-2B	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09693	HAWKINS RANCH	10-4B	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09694	HAWKINS RANCH	10-4C	PLATEAU	69300	NWNW 10 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09807	HAWKINS RANCH	14-3A	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09883	HAWKINS RANCH	15-1A	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09882	HAWKINS RANCH	10-16B	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09884	HAWKINS RANCH	10-16C	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09885	HAWKINS RANCH	11-13C	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
	HAWKINS RANCH	14-5A	PLATEAU	69300	SWSW 11 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09267	HELLS GULCH FED	23-11C	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09275	HELLS GULCH FED	26-4C	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09299	HELLS GULCH FED	24-5	WILDCAT	99999	SWNW 24 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09300	HELLS GULCH FED	24-5A	WILDCAT	99999	SWNW 24 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09301	HELLS GULCH FED	24-5B	WILDCAT	99999	SWNW 24 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09302	HELLS GULCH FED	23-10	WILDCAT	99999	SWNW 24 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09304	HELLS GULCH FED	26-16	ALKALI CREEK	1950	NESW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09264	HELLS GULCH FED.	23-11B	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09265	HELLS GULCH FED.	23-14A	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09266	HELLS GULCH FED.	23-14B	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09269	HELLS GULCH FED.	23-12B	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09270	HELLS GULCH FED.	23-12C	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09271	HELLS GULCH FED.	23-11A	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-09272	HELLS GULCH FED.	26-3C	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09273	HELLS GULCH FED.	26-4A	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09274	HELLS GULCH FED.	26-4B	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09276	HELLS GULCH FED.	26-5A	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09277	HELLS GULCH FED.	26-5B	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09278	HELLS GULCH FED.	26-3A	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09279	HELLS GULCH FED.	26-3B	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09303	HELLS GULCH FED.	26-9C	ALKALI CREEK	1950	NESW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09305	HELLS GULCH FED.	26-16A	ALKALI CREEK	1950	NESW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09306	HELLS GULCH FED.	26-10C	ALKALI CREEK	1950	NESW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09392	HELLS GULCH FED.	23-15	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09393	HELLS GULCH FED.	26-2C	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09394	HELLS GULCH FED.	26-2B	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09395	HELLS GULCH FED.	26-2A	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09396	HELLS GULCH FED.	23-15C	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09397	HELLS GULCH FED.	23-15B	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09398	HELLS GULCH FED.	23-15A	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09399	HELLS GULCH FED.	25-5	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08798	HELLS GULCH FEDERAL	2-2	ALKALI CREEK	1950	NWNE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08873	HELLS GULCH FEDERAL	2-16	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08874	HELLS GULCH FEDERAL	2-15	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08875	HELLS GULCH FEDERAL	2-10	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08876	HELLS GULCH FEDERAL	2-9	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08878	HELLS GULCH FEDERAL	2-8	ALKALI CREEK	1950	NWNE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08879	HELLS GULCH FEDERAL	2-1	ALKALI CREEK	1950	NWNE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08888	HELLS GULCH FEDERAL	23-13	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08889	HELLS GULCH FEDERAL	23-14	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08890	HELLS GULCH FEDERAL	23-12	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08891	HELLS GULCH FEDERAL	23-11	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08892	HELLS GULCH FEDERAL	25-12	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08893	HELLS GULCH FEDERAL	26-11	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08894	HELLS GULCH FEDERAL	26-2	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08895	HELLS GULCH FEDERAL	26-6	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08896	HELLS GULCH FEDERAL	24-13	ALKALI CREEK	1950	SWNE 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08897	HELLS GULCH FEDERAL	26-5	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08898	HELLS GULCH FEDERAL	26-4	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08899	HELLS GULCH FEDERAL	26-3	ALKALI CREEK	1950	SENW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08962	HELLS GULCH FEDERAL	2-7	WILDCAT	99999	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09268	HELLS GULCH FEDERAL	23-12A	ALKALI CREEK	1950	SWSW 23 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09656	HELLS GULCH FEDERAL	23-13C	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09657	HELLS GULCH FEDERAL	23-14C	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09658	HELLS GULCH FEDERAL	23-13B	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09659	HELLS GULCH FEDERAL	23-13A	ALKALI CREEK	1950	NWNW 26 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09376	HELL'S GULCH FEDERAL	1-12	PLATEAU	69300	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09377	HELL'S GULCH FEDERAL	2-11	PLATEAU	69300	NWSE 2 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09156	HIDDEN CREEK WEST FED	23-2	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09152	HIDDEN CREEK WEST FED.	23-3	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09153	HIDDEN CREEK WEST FED.	23-6	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09154	HIDDEN CREEK WEST FED.	23-7	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09155	HIDDEN CREEK WEST FED.	23-5	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09157	HIDDEN CREEK WEST FED.	23-4	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09158	HIDDEN CREEK WEST FED.	23-1	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09262	HIDDEN CREEK WEST FED.	23-3A	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09263	HIDDEN CREEK WEST FED.	23-3B	ALKALI CREEK	1950	SESW 14 8S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09728	HIGHTOWER FEDERAL	21-3	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09729	HIGHTOWER FEDERAL	21-8	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09730	HIGHTOWER FEDERAL	21-7	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09731	HIGHTOWER FEDERAL	21-6	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09732	HIGHTOWER FEDERAL	21-1	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09733	HIGHTOWER FEDERAL	21-4	WILDCAT	99999	NENW 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes

05-077-09734	HIGHTOWER FEDERAL	21-2	WILDCAT	99999	NWNE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09735	HIGHTOWER FEDERAL	21-16	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09736	HIGHTOWER FEDERAL	21-9	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09737	HIGHTOWER FEDERAL	21-15	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09738	HIGHTOWER FEDERAL	21-14	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09739	HIGHTOWER FEDERAL	21-11	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09740	HIGHTOWER FEDERAL	21-10	WILDCAT	99999	NWSE 21 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09741	HIGHTOWER FEDERAL	20-4	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09742	HIGHTOWER FEDERAL	20-7	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09743	HIGHTOWER FEDERAL	20-2	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09744	HIGHTOWER FEDERAL	20-5	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09745	HIGHTOWER FEDERAL	20-6	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09746	HIGHTOWER FEDERAL	20-3	WILDCAT	99999	SENW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09747	HIGHTOWER FEDERAL	20-11	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09748	HIGHTOWER FEDERAL	20-10	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09749	HIGHTOWER FEDERAL	20-12	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09750	HIGHTOWER FEDERAL	20-13	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09751	HIGHTOWER FEDERAL	20-14	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09752	HIGHTOWER FEDERAL	20-15	WILDCAT	99999	NESW 20 9S 92W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08460	KENAI LATHAM	25-41	SHIRE GULCH	77450	NENE 25 9S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09065	LARAMIE LAND & CATTLE	36-14A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09062	LARAMIE LAND & CATTLE CO	36-10A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09064	LARAMIE LAND & CATTLE CO	36-10	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09067	LARAMIE LAND & CATTLE CO	36-8A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09068	LARAMIE LAND & CATTLE CO	36-8	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09069	LARAMIE LAND & CATTLE CO	36-7	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09066	LARAMIE LAND & CATTLE CO	36-9	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09431	LARAMIE LAND & CATTLE COMPANY	17-4A	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09432	LARAMIE LAND & CATTLE COMPANY	17-5	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09433	LARAMIE LAND & CATTLE COMPANY	17-5B	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09435	LARAMIE LAND & CATTLE COMPANY	17-4C	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09436	LARAMIE LAND & CATTLE COMPANY	17-5A	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09437	LARAMIE LAND & CATTLE COMPANY	17-4B	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09209	LARAMIE LAND & CATTLE CO	36-11A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09422	LARAMIE LAND&CATTLE CO	17-3C	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09424	LARAMIE LAND&CATTLE CO	17-3A	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09425	LARAMIE LAND&CATTLE CO	17-4	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09426	LARAMIE LAND&CATTLE CO	17-3	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09427	LARAMIE LAND&CATTLE CO	17-6	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09428	LARAMIE LAND&CATTLE CO	17-6A	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09429	LARAMIE LAND&CATTLE CO	17-6B	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09434	LARAMIE LAND&CATTLE CO	17-5C	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09063	LARAMIE LAND&CATTLE CO	36-14	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09430	LARAMIE LAND&CATTLE CO	17-6C	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09212	LARAMIE LAND&CATTLE CO	36-9A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09213	LARAMIE LAND&CATTLE CO	36-11	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09208	LARAMIE LAND&CATTLE CO	36-15	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09210	LARAMIE LAND&CATTLE CO	36-7A	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09211	LARAMIE LAND&CATTLE CO.FED	31-12	PLATEAU	69300	NWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09423	LARAMINE LAND&CATTLE CO	17-3B	PLATEAU	69300	SWNW 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10972	LOGAN TRAIL FED.	28-9	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10974	LOGAN TRAIL FED.	28-15	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10977	LOGAN TRAIL FED.	28-16	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10973	LOGAN TRAIL FEDERAL	28-7	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10975	LOGAN TRAIL FEDERAL	28-11	GRAND VALLEY		NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-045-10976	LOGAN TRAIL FEDERAL	28-10	WILDCAT	99999	NESE 28 7S 97W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08818	MC DANIEL	11-8	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08566	MCDANIEL	11-10	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08815	MCDANIEL	11-16	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08817	MCDANIEL	11-9	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-08882	MCDANIEL	14-8	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08883	MCDANIEL	14-7	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08902	MCDANIEL	2-15	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08903	MCDANIEL	2-16	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08904	MCDANIEL	2-10	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08905	MCDANIEL	13-4	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08906	MCDANIEL	2-9	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08907	MCDANIEL	14-1	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08908	MCDANIEL	2-6	BRUSH CREEK	7562	NENW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08909	MCDANIEL	2-5	BRUSH CREEK	7562	NENW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08910	MCDANIEL	2-4	BRUSH CREEK	7562	NENW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08911	MCDANIEL	2-3	BRUSH CREEK	7562	NENW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08935	MCDANIEL	2-8	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08936	MCDANIEL	2-7	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08938	MCDANIEL	2-1	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08957	MCDANIEL	11-15	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09110	MCDANIEL	11-11	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09118	MCDANIEL	11-14	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09340	MCDANIEL	2-1B	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09341	MCDANIEL	2-1A	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09342	MCDANIEL	2-1C	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09343	MCDANIEL	2-2A	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09344	MCDANIEL	2-2B	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09345	MCDANIEL	2-2C	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09346	MCDANIEL	2-8B	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09347	MCDANIEL	2-8A	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09348	MCDANIEL	2-7B	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09349	MCDANIEL	2-7A	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09378	MCDANIEL	2-8C	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09379	MCDANIEL	2-7C	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09404	MCDANIEL	2-16A	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09405	MCDANIEL	2-16B	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09406	MCDANIEL	2-16C	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09407	MCDANIEL	2-15A	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09408	MCDANIEL	2-15B	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09409	MCDANIEL	2-15C	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09410	MCDANIEL	2-9B	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09411	MCDANIEL	2-9C	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09412	MCDANIEL	2-10A	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09413	MCDANIEL	2-10B	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09414	MCDANIEL	2-10C	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09415	MCDANIEL	2-9A	BRUSH CREEK	7562	NESE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09502	MCDANIEL	11-14B	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09556	MCDANIEL	11-11A	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09557	MCDANIEL	11-11C	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09558	MCDANIEL	11-11B	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09561	MCDANIEL	11-14A	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09595	MCDANIEL	14-6A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09119	MCDANIEL	15-1	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09596	MCDANIEL	15-1A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09597	MCDANIEL	15-1B	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09598	MCDANIEL	15-1C	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09599	MCDANIEL	14-3B	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09600	MCDANIEL	14-3A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09601	MCDANIEL	14-3C	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09602	MCDANIEL	14-5A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09603	MCDANIEL	14-4C	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09604	MCDANIEL	14-4B	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09605	MCDANIEL	14-4A	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09606	MCDANIEL	11-14C	BRUSH CREEK	7562	NENW 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes

05-077-09646	MCDANIEL	11-10B	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09647	MCDANIEL	11-15B	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09648	MCDANIEL	11-15A	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09649	MCDANIEL	11-10A	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09650	MCDANIEL	11-10C	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09651	MCDANIEL	11-16B	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09652	MCDANIEL	11-16A	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09653	MCDANIEL	11-15C	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09654	MCDANIEL	11-9C	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09655	MCDANIEL	11-9B	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09709	MCDANIEL	11-9A	BRUSH CREEK	7562	NWSE 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-19074	MCDANIEL	2-11	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09111	MCDANIEL FED.	11-13	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09112	MCDANIEL FED.	11-6	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09113	MCDANIEL FED.	11-6	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09114	MCDANIEL FED.	11-12	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08958	MCDANIEL FEDERAL	12-13	BRUSH CREEK	7562	NENE 14 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09071	MCDANIEL FEDERAL	2-12	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09072	MCDANIEL FEDERAL	2-13	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09073	MCDANIEL FEDERAL	2-14	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09120	MCDANIEL FEDERAL	11-4	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09121	MCDANIEL FEDERAL	11-3	BRUSH CREEK	7562	NESW 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09257	MCDANIEL FEDERAL	1-4-5	BRUSH CREEK	7562	NENE 2 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09559	MCDANIEL FEDERAL	11-12C	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09560	MCDANIEL FEDERAL	11-13C	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09573	MCDANIEL FEDERAL	11-13B	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09574	MCDANIEL FEDERAL	11-12A	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09575	MCDANIEL FEDERAL	11/13A	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09576	MCDANIEL FEDERAL	11-12B	BRUSH CREEK	7562	SESW 11 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08828	MCELWAIN	12-4	BRUSH CREEK	7562	SWNW 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08837	MCELWAIN	12-12	BRUSH CREEK	7562	SWNW 12 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09086	MITCHELL	32-3	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09108	MITCHELL	32-6	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09085	MITCHELL FED.	32-4	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09087	MITCHELL FED.	32-11	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09088	MITCHELL FED.	32-12	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09109	MITCHELL FED.	32-5	PLATEAU	69300	SESW 32 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11296	MONTOVER	30-15	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11408	MONTOVER	30-8	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11409	MONTOVER	30-9	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11410	MONTOVER	30-10	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11411	MONTOVER	30-16	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11356	MONTOVER FEDERAL	30-11	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11357	MONTOVER FEDERAL	30-6	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11358	MONTOVER FEDERAL	30-14	WILDCAT	99999	NWSE 30 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08810	MY WAY RANCH	8-12	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08811	MY WAY RANCH	17-7	PLATEAU	69300	SWNE 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	20606	Yes
05-077-08813	MY WAY RANCH	8-4	PLATEAU	69300	NWNW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08820	MY WAY RANCH	16-13	PLATEAU	69300	SWSE 16 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08822	MY WAY RANCH	1-1	PLATEAU	69300	NWNW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08851	MY WAY RANCH	16-11	PLATEAU	69300	SWSE 16 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08870	MY WAY RANCH	8-14	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08871	MY WAY RANCH	8-11	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08943	MY WAY RANCH	17-8	PLATEAU	69300	SWNE 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08952	MY WAY RANCH	7-1A	PLATEAU	69300	SENE 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08953	MY WAY RANCH	7-2	PLATEAU	69300	SENE 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08954	MY WAY RANCH	7-7	PLATEAU	69300	SENE 7 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08988	MY WAY RANCH	6-4	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08989	MY WAY RANCH	18-6	PLATEAU	69300	SWNW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08990	MY WAY RANCH	18-3	PLATEAU	69300	SWNW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	21923	Yes
05-077-08991	MY WAY RANCH	18-4	PLATEAU	69300	SWNW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes

05-077-08996	MY WAY RANCH	18-8	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08997	MY WAY RANCH	18-7	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08998	MY WAY RANCH	18-2	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08999	MY WAY RANCH	36-16	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09047	MY WAY RANCH	18-5	PLATEAU	69300	SWNW 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09048	MY WAY RANCH	18-1A	PLATEAU	69300	NENE 18 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09070	MY WAY RANCH	1-8	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08866	MY WAY RANCH 8-13	0	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08955	MY WAY RANCH FED.	17-1	PLATEAU	69300	SWNE 17 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09016	MY WAY RANCH FED.	6-11	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09017	MY WAY RANCH FED.	31-14	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09018	MY WAY RANCH FED.	6-6	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09019	MY WAY RANCH FED.	6-8	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09020	MY WAY RANCH FED.	6-9	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09021	MY WAY RANCH FED.	6-10	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09022	MY WAY RANCH FED.	6-2	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09023	MY WAY RANCH FED.	6-7	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09024	MY WAY RANCH FED.	8-12	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09025	MY WAY RANCH FED.	6-14	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09026	MY WAY RANCH FED.	6-15	PLATEAU	69300	NESW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08819	MY WAY RANCH FEDERAL	31-13	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08821	MY WAY RANCH FEDERAL	6-16	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08859	MY WAY RANCH FEDERAL	6-3	PLATEAU	69300	NWNW 6 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08887	MY WAY RANCH FEDERAL	8-15	PLATEAU	69300	SESW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09075	MY WAY RANCH FEDERAL	5-14	PLATEAU	69300	NWNW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09076	MY WAY RANCH FEDERAL	5-13	PLATEAU	69300	NWNW 8 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09226	NICHOLS	24-12	BRUSH CREEK	7562	SENW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09227	NICHOLS	24-10	BRUSH CREEK	7562	SENW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09228	NICHOLS	24-6	BRUSH CREEK	7562	SENW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09229	NICHOLS	24-3	BRUSH CREEK	7562	SENW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09230	NICHOLS	24-4	BRUSH CREEK	7562	SENW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09231	NICHOLS	24-5	BRUSH CREEK	7562	SENW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09232	NICHOLS	24-11	BRUSH CREEK	7562	SENW 24 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08959	RED MOUNTAIN RANCH	4-4	PLATEAU	69300	SENW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08960	RED MOUNTAIN RANCH	4-3	PLATEAU	69300	SENW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08964	RED MOUNTAIN RANCH	4-5	PLATEAU	69300	SENW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08965	RED MOUNTAIN RANCH	4-6	PLATEAU	69300	SENW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08967	RED MOUNTAIN RANCH	4-12	PLATEAU	69300	SENW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09233	RED MOUNTAIN RANCH	33-15	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09234	RED MOUNTAIN RANCH	33-14	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09235	RED MOUNTAIN RANCH	4-2	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09236	RED MOUNTAIN RANCH	33-13	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09237	RED MOUNTAIN RANCH	33-11	PLATEAU	69300	NESW 33 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08966	RED MOUNTAIN RANCH	4-11	PLATEAU	69300	SENW 4 10S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-08243	SPARKS	36-4	PLATEAU	69300	SWSE 36 9S 95W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09364	STITES	21-5B	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09365	STITES	21-5A	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09366	STITES	21-5	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09367	STITES	21-5C	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09520	STITES	20-7B	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09521	STITES	20-7C	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09522	STITES	20-7A	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09523	STITES	20-1B	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09524	STITES	21-4B	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09525	STITES	21-4A	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09526	STITES	21-4C	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09527	STITES	20-1A	BUZZARD CREEK	9500	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09723	STITES	20-8C	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09724	STITES	20-8B	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes
05-077-09725	STITES	20-8A	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck	Yes

05-077-09726	STITES	20-1	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09727	STITES	20-1C	BUZZARD	9495	SENE 20 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-08444	TEXACO-STARNER	26-32	WILDCAT	99999	SWNE 26 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11107	TRISCH/LASHLEY	32-5	WILDCAT	99999	SWNW 32 6S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11244	TRISCH/LASHLEY	31-9	WILDCAT	99999	SWNW 32 6S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11245	TRISCH/LASHLEY	31-8	WILDCAT	99999	SWNW 32 6S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11258	TUGUVU-N	3-7	WILDCAT	99999	SENW 3 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11366	TUGUVU-N	3-6	WILDCAT	99999	SENW 3 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-045-11367	TUGUVU-N	3-5	WILDCAT	99999	SENW 3 7S 90W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09137	UTE WATER	36-12	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09138	UTE WATER	35-9	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09139	UTE WATER	35-8	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09140	UTE WATER	36-5	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09141	UTE WATER	35-15	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09142	UTE WATER	36-13	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09143	UTE WATER	35-16	BRUSH CREEK	7562	NESE 35 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09144	UTE WATER	27-3	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09145	UTE WATER	27-2	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09146	UTE WATER	22-15	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09147	UTE WATER	22-14	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09148	UTE WATER	22-13	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09149	UTE WATER	22-12	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09150	UTE WATER	22-11	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09151	UTE WATER	22-10	BRUSH CREEK	7562	SESW 22 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09222	UTE WATER	27-10	BRUSH CREEK	7562	NESW 27 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09223	UTE WATER	27-15	BRUSH CREEK	7562	NESW 27 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09224	UTE WATER	27-11	BRUSH CREEK	7562	NESW 27 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09225	UTE WATER	27-6	BRUSH CREEK	7562	NESW 27 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09162	WOODS-SPANGLER	22-4	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09163	WOODS-SPANGLER	21-1	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09164	WOODS-SPANGLER	15-14	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09165	WOODS-SPANGLER	15-13	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09166	WOODS-SPANGLER	15-12	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09167	WOODS-SPANGLER	15-11	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes
05-077-09214	WOODS-SPANGLER	16-16	BRUSH CREEK	7562	SWSW 15 9S 94W	Oxy USA Inc.	66561	WMFK	To be submitted	Truck		Yes

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APR 27 2009

COGCC

March 19, 2009

Siemens Water Technologies Corp.
301 W. Military Rd.
Rothschild, WI 54474

Attn: Eric Lorge

REPORT NO.: 0903114

PROJECT NO.: 449000 Oxy Piceance Pilot

Please find enclosed the analytical report, including the Sample Summary, Sample Narrative and Chain of Custody for your sample set received March 6, 2009.

All analyses were performed in accordance with NELAC Standards using approved methods as indicated on this report.

If you have any questions about the results, please call. Thank you for using Siemens Water Technologies for your analytical needs.

Sincerely,

Siemens Water Technologies

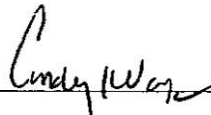


Mariah Peronto
Client Services Chemist
Enviroscan Analytical™ Services

Cc: James Welch Siemens Houston TX

I certify that the data contained in this report has been generated and reviewed in accordance with the Siemens Water Technologies Quality Assurance Program. Exceptions, if any, are discussed in the sample narrative. Samples will be retained for 30 days from the date of this report, then disposed in an appropriate manner. Siemens Water Technologies Corp. reserves the right to return samples identified as hazardous. Release of this Final Report is authorized as verified by the following signature.

Approved by:



Certifications:

Wisconsin 737053130
Minnesota 055-999-302
Illinois 100317



Siemens Water Technologies Corp.

301 West Military Road
Rothschild, WI 54474
www.siemens.com/enviroscan

Tel: 800-338-7226
Fax: 715-355-3221



SAMPLE SUMMARY

Lab Id
0903114-01

Client Sample Id
Pond 10

Date/Time
03/05/09 11:30

Matrix
Waste Water

commingled cascade cr. produced water

SIEMENS

Sample Narrative

Reactive Silica canceled due to interferences in the analysis. Sample forms an interfering blue color upon addition of oxalic acid which gives a biased high result.

SIEMENS

Siemens Water Technologies Corp.
301 W. Military Rd.
Rothschild, WI 54474

PROJECT NO. : 449000 Oxy Piceance Pilot
REPORT NO. : 0903114
DATE REC'D 03/06/09 10:50
REPORT DATE : 03/19/09 10:18
PREPARED BY : MKP

Attn: Eric Lorge

Sample ID: Pond 10

Matrix: Waste Water

Sample Date/Time: 03/05/09 11:30

Lab No. : 0903114-01

	<u>Results</u>	<u>Units</u>	<u>LOD</u>	<u>LOQ</u>	<u>Dilution Factor</u>	<u>Qualifiers</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<u>EPA 1664 A</u>								
Hexane Extractable Material (HEM)	408	mg/L	1.40	4.66	1		03/10/09	KAM
<u>EPA 180.1</u>								
Turbidity	1700	NTU	10	10	100		03/06/09 16:30	LNB
<u>EPA 200.7 - Recoverable</u>								
Total Recoverable Copper	ND	mg/L	0.0160	0.200	4		03/10/09	DJB
<u>EPA 200.7 - Total</u>								
Total Boron	15700	ug/L	240	400	40		03/10/09	DJB
Total Calcium	236	mg/L	0.40	0.40	4		03/10/09	DJB
Total Copper	ND	mg/L	0.0160	0.200	4		03/10/09	DJB
Total Iron	138	mg/L	0.040	0.400	4		03/10/09	DJB
Total Magnesium	26.8	mg/L	0.40	0.40	4		03/10/09	DJB
Total Potassium	202	mg/L	4.00	4.00	4		03/10/09	DJB
Total Silica (SiO2)	73.9	mg/L	0.856	4.28	4		03/10/09	DJB
Total Silicon	34.5	mg/L	0.400	2.00	4		03/10/09	DJB
Total Sodium	6280	mg/L	50.0	50.0	100		03/10/09	DJB
<u>EPA 200.8 - Diss.</u>								
Dissolved Aluminum	ND	ug/L	20.0	66.7	10		03/18/09	JCH
Dissolved Arsenic	29.4	ug/L	6.00	20.0	10		03/18/09	JCH
Dissolved Barium	3980	ug/L	50.0	167	25		03/18/09	JCH
Dissolved Cadmium	ND	ug/L	2.00	20.0	10		03/18/09	JCH
Dissolved Chromium	ND	ug/L	16.0	53.3	10		03/18/09	JCH
Dissolved Manganese	1790	ug/L	10.0	33.3	10		03/18/09	JCH
Dissolved Nickel	15.6	ug/L	3.00	20.0	10	J	03/18/09	JCH
Dissolved Selenium	ND	ug/L	6.00	20.0	10		03/18/09	JCH
Dissolved Strontium	15700	ug/L	150	500	250		03/18/09	JCH
Dissolved Zinc	51.8	ug/L	50.0	167	25	J	03/18/09	JCH
<u>EPA 200.8 - Total</u>								
Total Aluminum	550	ug/L	20.0	66.7	10		03/16/09	JCH
Total Arsenic	60.0	ug/L	6.00	20.0	10		03/16/09	JCH
Total Barium	32800	ug/L	2000	6670	1000		03/16/09	JCH
Total Cadmium	ND	ug/L	2.00	20.0	10		03/16/09	JCH

SIEMENS

Siemens Water Technologies Corp.
301 W. Military Rd.
Rothschild, WI 54474

PROJECT NO. : 449000 Oxy Piceance Pilot
REPORT NO. : 0903114
DATE REC'D 03/06/09 10:50
REPORT DATE : 03/19/09 10:18
PREPARED BY : MKP

Attn: Eric Lorge

Sample ID: Pond 10	Matrix: Waste Water	Sample Date/Time: 03/05/09 11:30	Lab No. : 0903114-01					
	Results	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
<u>EPA 200.8 - Total Continued</u>								
Total Chromium	35.4	ug/L	16.0	53.3	10	J	03/16/09	JCH
Total Manganese	1840	ug/L	10.0	33.3	10		03/16/09	JCH
Total Nickel	29.0	ug/L	3.00	20.0	10		03/16/09	JCH
Total Selenium	ND	ug/L	6.00	20.0	10		03/16/09	JCH
Total Strontium	20300	ug/L	600	2000	1000		03/16/09	JCH
Total Titanium	17.2	ug/L	6.00	20.0	10	J	03/16/09	JCH
Total Zinc	73.8	ug/L	20.0	66.7	10		03/16/09	JCH
<u>EPA 200.8/6020</u>								
ICPMS Liquid Metal Prep	Completed	N/A			1		03/11/09	JCH
<u>EPA 245.1 - Diss.</u>								
Dissolved Mercury	ND	ug/L	0.070	0.230	1		03/10/09	JCH
<u>EPA 245.1 - Total</u>								
Total Mercury	0.191	ug/L	0.070	0.230	1	J	03/10/09	JCH
<u>EPA 300.0 - Total</u>								
Total Bromide	81.0	mg/L	5.00	16.7	20		03/09/09	BMS
Total Chloride	9560	mg/L	100	333	100		03/06/09	BMS
Total Nitrate as N	ND	mg/L	0.20	0.66	2	HT	03/09/09 9:58	BMS
Total Nitrite as N	ND	mg/L	1.00	3.30	10		03/06/09 20:19	BMS
Total Sulfate	89.2	mg/L	2.00	6.66	2		03/09/09	BMS
<u>EPA 3010A</u>								
ICP Liquid Metal Prep	Completed	N/A			1		03/09/09	DJB
<u>EPA 335.4</u>								
Total Cyanide	ND	mg/L	0.005	0.017	1		03/17/09	LNB
<u>EPA 351.2</u>								
Total Kjeldahl Nitrogen	20.8	mg/L	0.240	0.800	4		03/10/09	GAG
<u>EPA 365.1</u>								
Orthophosphate as P	0.058	mg/L	0.040	0.133	10	DUP, J	03/06/09 15:29	SMM

SIEMENS

Siemens Water Technologies Corp.
301 W. Military Rd.
Rothschild, WI 54474

PROJECT NO. : 449000 Oxy Piceance Pilot
REPORT NO. : 0903114
DATE REC'D : 03/06/09 10:50
REPORT DATE : 03/19/09 10:18
PREPARED BY : MKP

Attn: Eric Lorge

Sample ID: Pond 10	Matrix: Waste Water	Sample Date/Time: 03/05/09 11:30	Lab No. : 0903114-01					
	<u>Results</u>	<u>Units</u>	<u>LOD</u>	<u>LOQ</u>	<u>Dilution Factor</u>	<u>Qualifiers</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<u>EPA 410.4</u>								
Dissolved Chemical Oxygen Demand	1610	mg/L	100	100	10		03/10/09	SMM
<u>EPA 624</u>								
Benzene	3490	ug/L	100	335	500		03/09/09	MPM
Ethylbenzene	409	ug/L	100	335	500		03/09/09	MPM
m,p-Xylenes	6340	ug/L	200	650	500		03/09/09	MPM
o-Xylene	1350	ug/L	100	335	500		03/09/09	MPM
Toluene	5750	ug/L	200	650	500		03/09/09	MPM
<u>EPA 8015</u>								
Ethanol	ND	mg/L	3.32	11.1	1		03/11/09	ALZ
Methanol	239	mg/L	45.5	153	10		03/10/09	ALZ
<u>SM 2320 B</u>								
Total Alkalinity as CaCO3	1200	mg/L	10.0	10.0	1		03/09/09	JJP
<u>SM 2340B - Total</u>								
Total Hardness as CaCO3	699	mg/L	2.64	2.64	4		03/10/09	DJB
<u>SM 2510 B</u>								
Specific Conductance (EC)	29200	uS/cm			1		03/08/09	JJP
<u>SM 2540 C</u>								
Total Dissolved Solids	16600	mg/L	40.0	40.0	4		03/10/09	SMM
<u>SM 2540 D</u>								
Total Suspended Solids	855	mg/L	50.0	50.0	25		03/10/09	SMM
<u>SM 4500 F C</u>								
Total Fluoride	0.74	mg/L	0.10	0.33	1		03/09/09	GAG
<u>SM 4500 H+B</u>								
pH	7.04	pH Units			1		03/06/09 13:15	JJP
<u>SM 4500CO2</u>								
Bicarbonate Alkalinity	1190	mg/L	10.0	10.0	1		03/09/09	JJP

SIEMENS

Siemens Water Technologies Corp.
301 W. Military Rd.
Rothschild, WI 54474

PROJECT NO. : 449000 Oxy Piceance Pilot
REPORT NO. : 0903114
DATE REC'D 03/06/09 10:50
REPORT DATE : 03/19/09 10:18
PREPARED BY : MKP

Attn: Eric Lorge

Sample ID: Pond 10

Matrix: Waste Water

Sample Date/Time: 03/05/09 11:30

Lab No. : 0903114-01

	<u>Results</u>	<u>Units</u>	<u>LOD</u>	<u>LOQ</u>	<u>Dilution Factor</u>	<u>Qualifiers</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<u>SM 4500CO2 Continued</u>								
Carbonate Alkalinity	ND	mg/L	10.0	10.0	1		03/09/09	JJP
<u>SM 5210B</u>								
Prep Method: EPA 405.1/SM 5210B	By: SMM		Date Prepared: 03/06/09 17:30					
Total Biochemical Oxygen Demand	4780	mg/L	2000	2000	1000		03/11/09 0:00	SMM
<u>SM 5220 B</u>								
Dissolved Chemical Oxygen Demand	3280	mg/L	80.0	80.0	1		03/11/09	LMP
<u>SM 5310B</u>								
Total Organic Carbon	359	mg/L	5.00	10.0	10		03/09/09	JJP

SIEMENS

enter under Zimpro proj. 449000

Company Name OXY USA WTP LP		Project Produced Water Filtration <i>see email</i>	
Report Mailing Address 760 Horizon Dr., Ste 101 Grand Junction CO 81506		Contact Name, Phone, Fax, Email Brett Kennedy / brett.kennedy@oxy.com John Ocone / john.ocone@oxy.com	
Invoice Address NA		Purchase Order # NA	Invoice Contact and Phone No. NA

Matrix: Drinking Water Groundwater Wastewater Soil/Solid Other: _____

Wis. PECFA Project subject to U&C? Yes ☒ No

For Compliance Monitoring? Yes ☒ No State: _____
(If Yes, please specify Agency or Regulation) Agency/Reg.: _____

Turnaround Request: [] Normal (10 Bus. Days)
[] Rush (Must be pre-approved by Lab and is subject to surcharges)
Date Needed: _____

WO No. **0903114**

Analyses Requested										Lab Use Only		
per Siemens										Delivered by	Walk-in	Courier
										Ship. Cont. Ok?	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> NA
										Samples Leaking?	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> NA
										Seals OK?	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> NA
										Rec'd on ice?	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> NA
										Sample Receiving Comments: <i>Rec'd w/ custody Seal Filter</i> 2.8		
										Comments No Field Filtration <i>3 vials 3 vials NP 6-liter pl NP 2-250pl H2SO4 2-liter pl HNO3 1-250pl NaOH 2 vials H2SO4 1-liter pl H2SO4</i>		

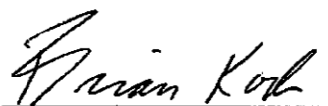
Lab Use Only	Sample		No. of Containers		Sample ID
	Date	Time	Comp	Grab	
—/	3/5/09	1130		20	Pond 10

Chain of Custody
Record

Relinquished By:	Date	Time	Received By:
<i>Brett Kennedy</i>	3/5/09	1530	
	3/6/09	1050	<i>Joe Hoch</i>

Water	Selenium Diss (WW) EPA 200.8	EPA 200.8 - Diss.	2	10	\$9.00	\$18.00
Water	Silicon Diss (WW) EPA 200.7	EPA 200.7 - Diss.	2	10	\$9.00	\$18.00
Water	Sodium Diss (WW) EPA 200.7	EPA 200.7 - Diss.	2	10	\$9.00	\$18.00
Water	Strontium Diss (WW) EPA 200.8	EPA 200.8 - Diss.	2	10	\$9.00	\$18.00
Water	Zinc Diss (WW) EPA 200.8	EPA 200.8 - Diss.	2	10	\$9.00	\$18.00
Water	VOC GC Methanol Direct (WW) EPA 8015	EPA 8015	2	10	\$0.00	\$0.00
Water	VOC GC Ethanol Direct (WW) EPA 8015	EPA 8015	2	10	\$65.00	\$130.00
Water	Bromide IC (WW) EPA 300.0	EPA 300.0 - Total	2	10	\$12.00	\$24.00
Water	Chloride Total IC (WW) EPA 300.0	EPA 300.0 - Total	2	10	\$9.00	\$18.00
Water	Nitrate IC (WW) EPA 300.0	EPA 300.0 - Total	2	10	\$9.00	\$18.00
Water	Nitrite IC (WW) EPA 300.0	EPA 300.0 - Total	2	10	\$9.00	\$18.00
Water	Sulfate IC (WW) EPA 300.0	EPA 300.0 - Total	2	10	\$9.00	\$18.00
Water	Alkalinity CarbTotal (WW) SM 4500CO2	SM 4500CO2	2	10	\$9.00	\$18.00
Water	Alkalinity Total (WW) SM 2320 B	SM 2320 B	2	10	\$9.00	\$18.00
Water	Alkalinity Bicarb Total (WW) SM 4500CO2	SM 4500CO2	2	10	\$9.00	\$18.00
Water	COD Macro Diss (WW) SM 5220 B	SM 5220 B	2	10	\$25.00	\$50.00
Water	COD Mini Diss (WW) EPA 410.4	EPA 410.4	2	10	\$25.00	\$50.00
Water	Conductivity (WW) EPA 120.1	SM 2510 B	2	10	\$5.00	\$10.00
Water	Cyanide Total (WW) EPA 335.4	EPA 335.4	2	10	\$35.00	\$70.00
Water	Fluoride Total ISE (WW) SM 4500 F C	SM 4500 F C	2	10	\$9.00	\$18.00
Water	HEM (WW) EPA 1664A	EPA 1664 A	2	10	\$45.00	\$90.00
Water	Ortho-P (WW) EPA 365.1	EPA 365.1	2	10	\$15.00	\$30.00
Water	pH (WW) SM 4500 H+B	SM 4500 H+B	2	10	\$5.00	\$10.00
Water	Silica Total Reactive (WW) EPA 370.1	EPA 370.1	2	10	\$15.00	\$30.00
Water	VOC GC BTEX (WW) EPA 8021B	EPA 8021B	2	10	\$24.00	\$48.00

\$1,766.00


 Brian Korb
 Client Services Manager
 Siemens Water Technologies Corp.