



## **Facility Closure Investigation and Environmental Summary**

Johnson C 29-28 Wellhead

ECMC Remediation Project #34724

Weld County, Colorado

### **Attachments:**

**Figure 1 – General Location Map**

**Figure 2 – Wellhead Soil Sample and Field Screening Locations**

**Table 1 – Soil Sample and Field Screening Location Information**

**Table 2 – Soil Analytical Results Summary Table – Volatile Organics**

**Table 3 – Soil Analytical Results Summary Table – PAHs**

**Table 4 – Soil Analytical Results Summary Table – Soil Suitability**

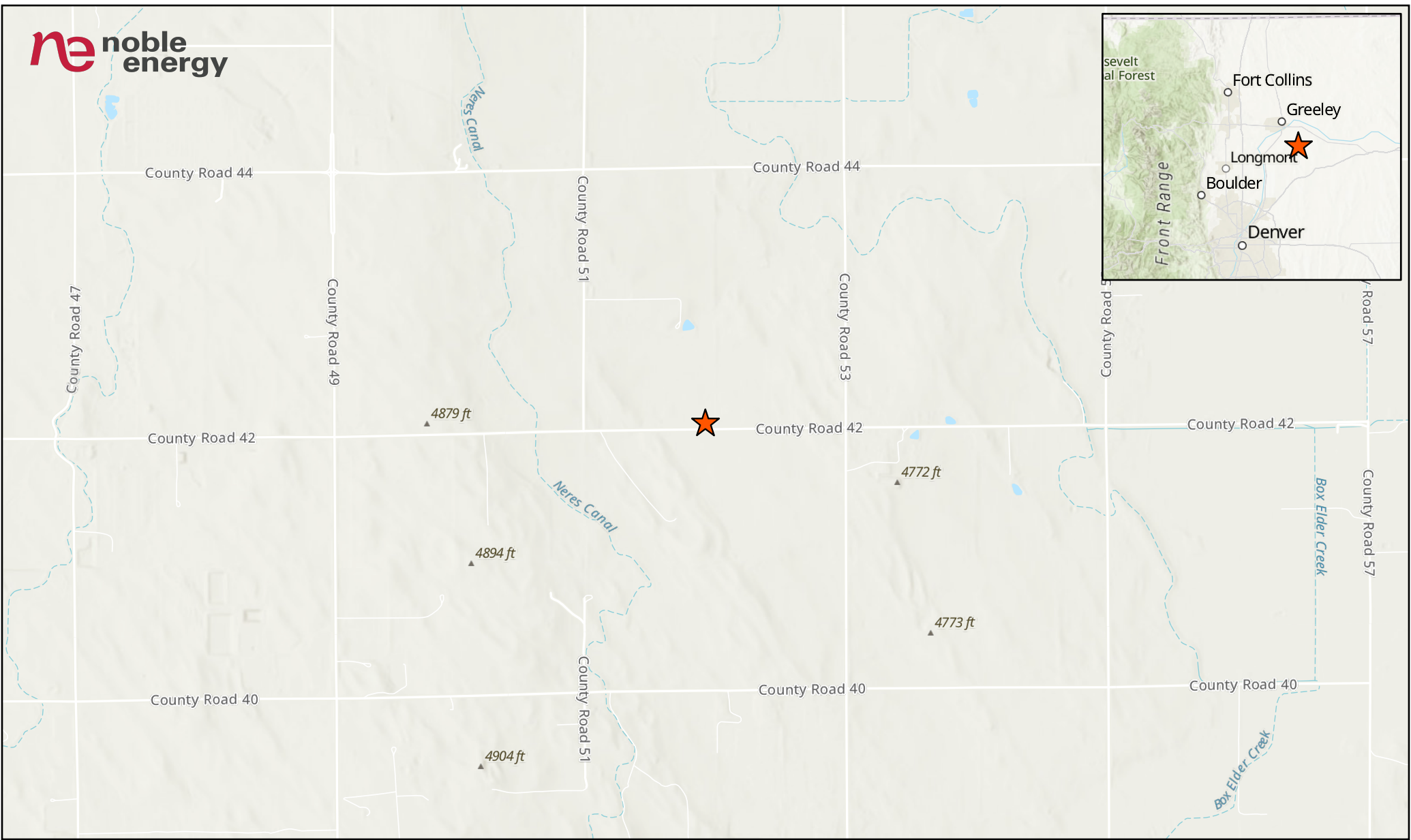
**Table 5 – Soil Analytical Results Summary Table – Metals**

**Attachment A: Photographic Log**

**Attachment B: Facility Closure Checklists**

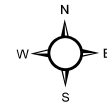
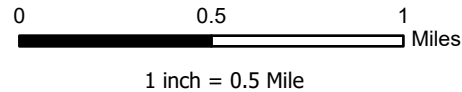
**Attachment C: Laboratory Analytical Reports**


## FIGURES

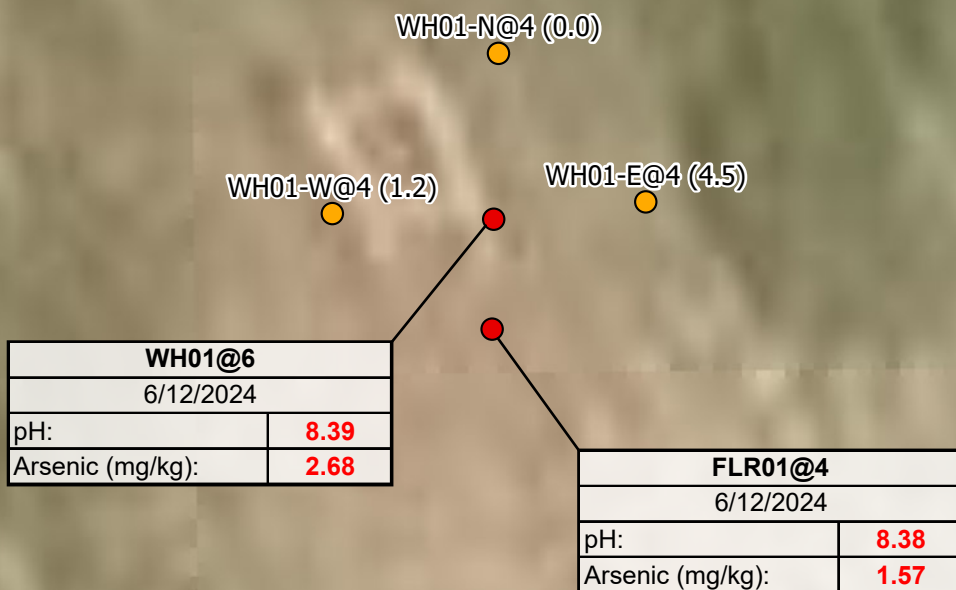


**LEGEND**

 Site Location



Project No: 024-256	<b>JOHNSON C29-28 WELLHEAD GENERAL LOCATION MAP</b> NOBLE ENERGY SE 1/4 SW 1/4 SECTION 20 T4N R64W, 6TH PM WELD COUNTY, COLORADO	 1843 Sunlight Dr. Longmont, CO 80504 303.378.4036	Figure
Map By: JW			1
Date: 07/25/2024			



**LABEL LEGEND**  
 XXXX@X: SAMPLE NAME @ DEPTH IN FEET  
 WH: WELLHEAD SAMPLE  
 FLR: FLOWLINE RISER SAMPLE  
**RED:** ABOVE ECMC TABLE 915-1 GWSSL

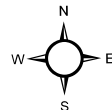
Maxar, Microsoft

## Legend

● Soil Sample ● Screening Location

**NOTES:**  
 - Sample Label (PID Result in ppm)  
 - ppm = parts per million  
 - PID = photoionization detector

0 5 10  
 Feet  
 1 inch = 10 Feet



Project No: 024-256

Map By: JW

Date: 07/24/2024

**JOHNSON C29-28 WELLHEAD**  
**SOIL SAMPLE AND FIELD SCREENING LOCATIONS**  
 NOBLE ENERGY  
 SE 1/4 SW 1/4 SECTION 20  
 T4N R64W, 6TH PM  
 WELD COUNTY, COLORADO



1843 Sunlight Drive  
 Longmont, CO 80504  
 303.378.4036

Figure

2

## **TABLES**

**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE 100322**  
**JOHNSON C29-28 WELLHEAD, WELD COUNTY, COLORADO**  
**REM # 34724**

Sample ID	Sample Date	Depth (ft-bgs)	GPS Data		VOC Concentration (ppm)
			Latitude/Longitude		
WH01@6	6/12/2024	6	40.291071	-104.575368	0.0
FLR01@4	6/12/2024	4	40.291055	-104.575369	1.5
WH01-W@4	6/12/2024	4	40.291072	-104.575398	1.2
WH01-E@4	6/12/2024	4	40.291073	-104.575340	4.5
WH01-N@4	6/12/2024	4	40.291095	-104.575367	0.0

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

ppm - Parts per million

ft-bgs - feet below ground surface

TABLE 2  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
NOBLE 100322  
JOHNSON C29-28 WELLHEAD, WELD COUNTY, COLORADO  
REM # 34724

Sample ID	Sample Date	Depth (ft-bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4- Trimethyl- Benzene (mg/kg)	1,3,5- Trimethyl- Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	500**		
WH01@6	6/12/2024	6	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002	<125.200	<0.200	<25.0	<100
FLR01@4	6/12/2024	4	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002	<125.200	<0.200	<25.0	<100

1. Grey highlighted soil analytical values indicate result is less than laboratory reporting limit

2. \*\* Summation of GRO+DRO+ORO must be less than 500 mg/kg

ft-bgs - feet below ground surface

mg/kg - milligrams per kilogram

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE 100322  
JOHNSON C29-28 WELLHEAD, WELD COUNTY, COLORADO  
REM # 34724

Sample ID	Sample Date	Depth (ft-bgs)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
WH01@6	6/12/2024	6	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002
FLR01@4	6/12/2024	4	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002

1. Grey highlighted soil analytical values indicate result is less than laboratory reporting limit  
ft-bgs - feet below ground surface  
mg/kg - milligrams per kilogram



**TABLE 4**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE 100322**  
**JOHNSON C29-28 WELLHEAD, WELD COUNTY, COLORADO**  
**REM # 34724**

Sample ID	Sample Date	Depth (ft-bgs)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
WH01@6	6/12/2024	6	8.39	0.801	1.68	0.466
FLR01@4	6/12/2024	4	8.38	0.880	2.94	0.234

1. **RED** - Above ECMC Table 915-1 Standards

ft-bgs - feet below ground surface

EC - Electrical Conductivity

SAR - Sodium adsorption ratio

mmhos/cm - millimhos per centimeter

mg/L - milligrams per liter

TABLE 5  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE 100322  
JOHNSON C29-28 WELLHEAD, WELD COUNTY, COLORADO  
REM # 34724

Sample ID	Sample Date	Depth (ft-bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
WH01@6	6/12/2024	6	2.68	74.0	0.119	<0.151*	<9.33	8.91	7.19	<0.243	<0.0933	<34.5
FLR01@4	6/12/2024	4	1.57	63.7	<0.0941	<0.167*	<9.41	5.17	6.45	<0.245	<0.0941	<34.8

1. RED - Above ECMC Table 915-1 Standards

2. Red highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)

3. Grey highlighted soil analytical values indicate result is less than laboratory reporting limit

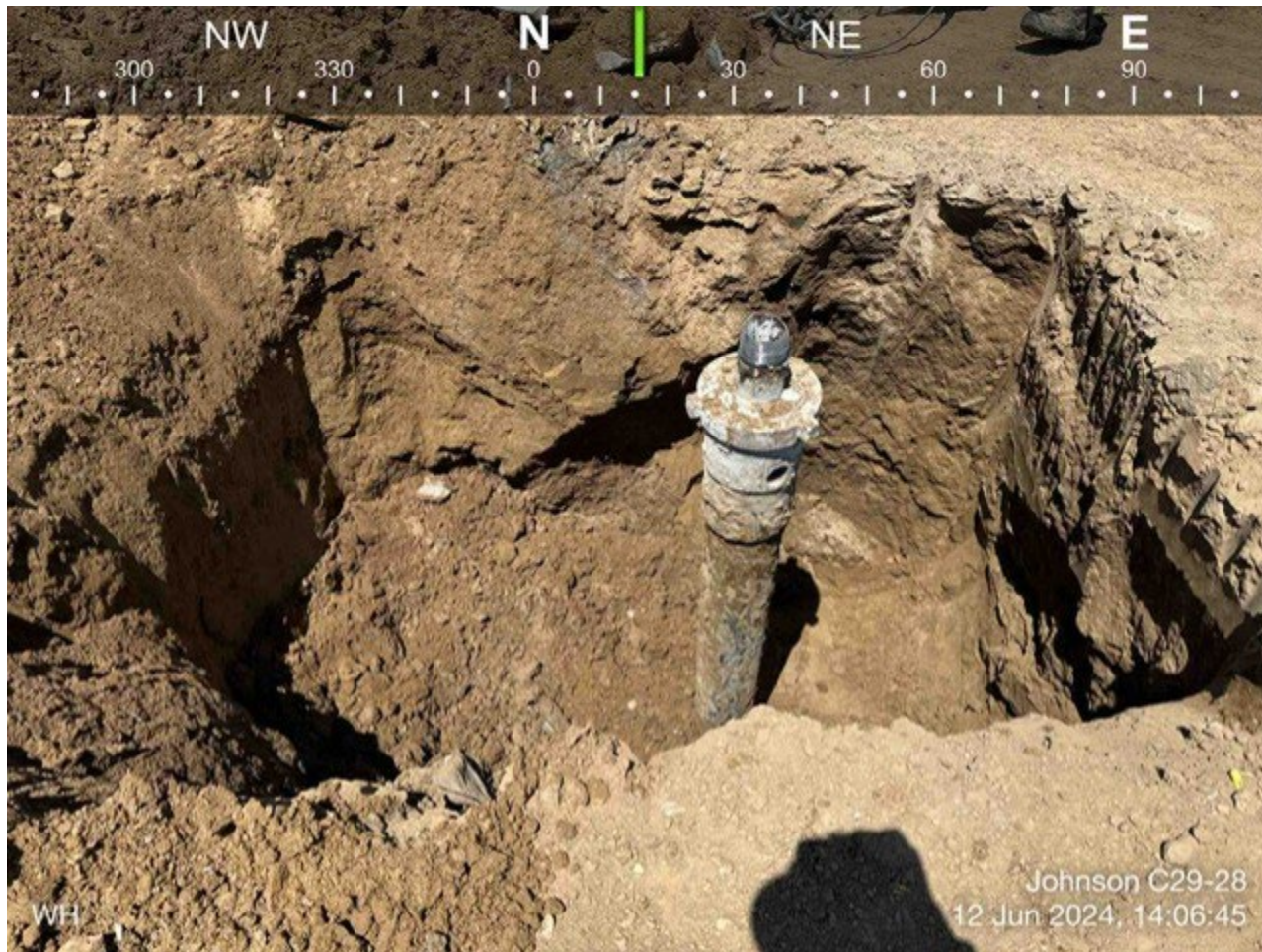
\* Indicates laboratory reporting or minimum detection limit in excess of SSL

ft-bgs - feet below ground surface

mg/kg - milligrams per kilogram

**ATTACHMENT A**  
**PHOTOGRAPHIC LOG**

# Johnson C29-28 Wellhead Photographic Log





# Johnson C29-28 Wellhead Photographic Log



# Johnson C29-28 Wellhead Photographic Log





# Johnson C29-28 Wellhead Photographic Log



**ATTACHMENT B**  
**FACILITY CLOSURE CHECKLISTS**



Wellhead Closure Checklist						
COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form						
Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure
Site Name & COGCC Facility Number: Johnson C29-28, 291654		Date: 06/12/2024				Remediation Project #: 34724
Associated Wells: NA		Age of Site: 08/07/2007- spud date				Number of Photos Attached: 4
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.291080 / -104.575370					Estimated Facility Size (acres): ~0.01	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)						
Overall good						
USCS Soil Type: Silty Sand (SM)				Estimated Depth to Groundwater: Unknown/ not encountered		
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)						
None encountered or observed						
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)						
None encountered or observed						
Wellhead(s)						
Well API	05-123-26113					
Age	08/07/2007- spud date					
Condition of surface around wellhead	Good					
PID Readings	0.0 to 4.5 ppm					
Condition of subsurface (staining present)	Good					
PID Readings	0.0 to 4.5 ppm					
Sample taken? Location/Sample ID#	WH01@6, FLR01@4					
Photo Number(s)	1-4					
Other observations regarding wellheads:						
Summary						
Was impacted soil identified?						
<input checked="" type="checkbox"/> No		Yes - less than 10 cubic yards		Yes - more than 10 cubic yards		
Total number of samples field screened: 5				Total number of samples collected: 5		
Highest PID Reading: 4.5 ppm				Total number of samples submitted to lab for analysis: 2		
If more than 10 cubic yards of impacted soil were observed: NA						
Vertical extent:				Estimated spill volume:		
Lateral extent:				Volume of soil removed:		
Is additional investigation required?						
Was groundwater encountered during the investigation?						
<input checked="" type="checkbox"/> No		Yes - not impacted or in contact with impacted soils		Yes - groundwater impacted and/or in contact with impacted soils		
Measured depth to groundwater:				Was remedial groundwater removal conducted? Yes No		
Date Groundwater was encountered:				Commencement date of removal:		
Sheen on groundwater? Yes No				Volume of groundwater removed prior to sampling:		
Free product observed? Yes No				Volume of groundwater removed post sampling:		
Total number of samples collected:				Total Volume of groundwater removed:		
Total number of samples submitted to lab for analysis:						