



WESCO OPERATING, INC.
O I L & G A S O P E R A T I O N S

Submitted via email and certified registered return receipt requested mail

Monday, October 16, 2017

Steven Mah
State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street
Suite 801
Denver, Colorado 80203

RE; Response to NOAV issued 6/1/2017 (document #401297902)
and NOAV issued 9/19/2017 (document # 401406173)

Mr. Mah;

This letter provides Wesco's Operating, Inc.'s (Wesco) response to the NOAV's referenced above. As approved by Jeremy Ferrin in his email to Wesco dated 7/5/2017, Wesco is providing a single response to both NOAV's.

In the sections below, Wesco has listed the comments from each section of the NOAV followed by our response. Where the NOAV comments vary significantly between the NOAV's, comments from both are listed with a single response from Wesco provided.

NOAV Comment #1

Rule 1101

Operator shall submit all pressure testing results for this segment of pipeline to COGCC including annual flowline testing results for the past three years, as required by Rule 1101.e. Operator shall determine root cause of the failure and develop a written plan that addresses how reoccurrence of this failure in this and other Operator facilities in Colorado will be avoided



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in the future, to include engineering, integrity management, pigging and inspection protocols, pressure testing, operations, maintenance, corrosion, cathodic protection, management, and training actions, as necessary.

Wesco Response

Wesco had a SCADA system continually monitoring the flowline pressures and maintains personnel on 24-hour call outs. Throughout the year Wesco will pressure up on the lines and monitor them for leaks, this data was stored in the SCADA system. In June 2017 our SCADA server was hacked and the programming and all the backups were corrupted and lost. At this time, we do not have any of the pressure data saved for the Maudlin Gulch Field.

The Maudlin Gulch # 18 flowline was installed by a previous operator. Wesco has replaced the upper ~400' of the line, including the section of pipe where both leaks occurred (closest to the battery) with 3" schedule 80 fusion bond pipe in 2014. The attached pipeline specification sheet (attachment #1) provides details about the line material. The line generally operates around 35 psi at the treater and 120 psi at the well head. The line is ~ 2.25 miles long. This pipe is 3" schedule 80 fusion bond pipe that Wesco replaced in 2014. This pipe is rated to a working pressure of 2600 psi and a burst pressure of 10,300 psi.

It appeared that both causes were from improper pipeline bedding, or rock movement. In both spills a rock was found lying against the side of the pipe and had worked through the Fusion Bond coating and ~0.31" of steel causing a pin hole leak. To alleviate future pipeline issues associated with the Maudlin Gulch # 18 well, Wesco will not use the Maudlin Gulch # 18 line until it can be replaced in its' entirety. Wesco has also developed the attached Pipe Repair and Replacement Procedure (attachment #2) for all future pipeline installs to ensure proper pipeline installation and has developed the attached pipeline maintenance procedure which will be followed at Wesco Sites.

It is important to note that since purchasing the Maudlin Gulch Field in 2010 Wesco has rebuilt the facility and replaced 4.2 miles of pipeline with Fiber Spar line, which is a spoolable corrosion resistant product. Past line issues have been caused by microbial corrosion and the



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replacement with Fiber Spar has eliminated those issues. When backfilling these line replacements, a hydraulic dirt sifter is used to ensure clean dirt is placed around the line. As the Maudlin Gulch # 18 past repair was a short section of line, the rocks were sifted by personal who must have missed the rocks causing the problems.

NOAV Comment #2

Rule 1102

Operator shall determine root cause of the failure and develop a written plan that addresses how reoccurrence of this failure in this and other Operator facilities in Colorado will be avoided in the future, to include engineering, integrity management, pigging and inspection protocols, pressure testing, operations, maintenance, corrosion, cathodic protection, management, and training actions, as necessary.

Wesco Response

The Maudlin Gulch # 18 flowline was installed by a previous operator. Wesco has replaced the upper ~400' of the line (closest to the battery) with 3" schedule 80 fusion bond pipe in 2014. See the attached pipeline specification sheet (attachment #1). The line generally runs around 35 psi at the treater and 120 psi at the well head. The line is ~ 2.25 miles long.

The pipe that failed in both NOAVs was the 3" schedule 80 fusion bond pipe that Wesco replaced in 2014. This pipe is rated to a working pressure of 2600 psi and a burst pressure of 10,300 psi.

It appeared that both causes were from improper pipeline bedding, or rock movement. In both spills a rock was found lying against the side of the pipe and had worked though the Fusion Bond coating and ~0.31" of steel causing a pin hole leak. To alleviate future pipeline issues associated with the Maudlin Gulch # 18 well, Wesco will not use the Maudlin Gulch # 18 line until it can be replaced in its' entirety. Wesco has also developed the attached Pipeline Repair and replacement procedure (Attachment #2) for all future pipeline installs to ensure proper pipeline installation and has developed the attached Pipeline Preventive Maintenance Program (attachment #3) which will be followed at all Wesco fields in Colorado.



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It is important to note that since taking over the Maudlin Gulch Field in 2010 Wesco has replaced 4.2 miles of pipeline with a Fiber Spar line, which is a spoolable corrosion resistant product. Past line issues have been caused by microbial corrosion and the replacement with Fiber Spar has eliminated those issues. When backfilling these line replacements, a hydraulic dirt sifter is used to ensure clean dirt is placed around the line. As the Maudlin Gulch # 18 past repair was a short section of line, the rocks were sifted through by personal who must have missed the rocks causing the problems.

NOAV Comment #3

NOAV #401406173 – issued 9/19/2017

Rule 324A

Operator will continue to complete any necessary cleanup of impacted areas to meet the standards in Table 910-1, through soil investigation and remediation. A Form 27, Site Investigation and Remediation Workplan, was submitted on June 27, 2017, and was approved on July 12, 2017. Through the plan, the Operator commits to conduct visual monitoring for hydrocarbons on a weekly basis along the Spill/Release flow path, to collect surface water samples, and to collect soil samples along the Spill/Release path once the drainage is dry (Document #401317237). To address the E&P waste stockpiled as a result of the Spill/Release and E&P waste previously stockpiled at the Maudlin Gulch Tank Battery (Location ID 428531), Operator submitted several iterations of a Form 27, Site Investigation and Remediation Work Plan, to bioremediate the E&P waste with a commencement and completion date of July 1, 2017. The last iteration of the Form 27 was received on July 5, 2017 and approved by COGCC on July 18, 2017. It was COGCC's understanding was that the Operator would commence remedial activities upon COGCC approval. On August 18, 2017, COGCC (Document Number 2495970) requested a status of the remedial activities and Operator responded on August 23, 2017 that they had not begun remedial activities at Maudlin Gulch Tank Battery would will not be able to until early Spring of 2018. Operator shall submit a Supplemental Form 27, Site Investigation and Remediation Work Plan, to the COGCC with a detailed and aggressive timeline for remediation of the stockpiled E&P waste. The Form 27 shall also describe the process that will be used to close the "Lined Soil Reclamation Site" (Document #1706339). The



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“Lined Soil Reclamation Site” shall no longer be used as a collection point for E&P waste. In Operator’s Rule 522.d.(2) NOAV answer, it shall provide a description of what steps Operator has taken to ensure that in the future all valves, pipes, and fittings are securely fastened, inspected at regular intervals, and maintained in good mechanical condition. Beginning October 1, 2017, Operator shall submit monthly Supplemental Form 27 Site Investigation and Remediation Work Plan status reports to the COGCC until all impacted area(s) have been remediated and meet standards in Table 910-1.

Wesco Response

Wesco has and will continue to conduct weekly inspections of the drainage until the water in the drainage is frozen. Since the June spill, Wesco staff have walked the entire June spill path (which overlies and extends beyond the March spill path) 36 times and continue to do so on a weekly basis. Documentation of the inspections was submitted in a Form 27s submitted 8/22/2017 and again in a Form 27s submitted 10/18/2017. A log of the inspections has been previously submitted in a Form 27s and is attached to this response as attachment #4 along with photo documentation of the October 3rd inspection (attachment #5). In addition, the drainage is aerially inspected twice monthly and has been since 2011. No oil has been observed in the drainage since the July 5th inspection. Wesco will continue to submit monthly inspection update reports via supplemental Form 27’s until the drainage is frozen.

Wesco has collected the required surface water samples. The results have been submitted via a supplemental Form 27. The samples indicated no impact to the surface water was present.

Wesco has collected four of the five required soil samples in accordance with the approved Form 27. The results of the soil analysis were submitted via a supplemental Form 27. The results of the soil sampling indicated TPH concentrations at all sampled locations are below Table 910 limits. The only soil sample not collected is planned for collection at the source when the buried line which caused the release is replaced in accordance with the approved Form 27. The line has not been replaced and likely will not be replaced until spring, 2018. The line will not be placed into service until it has been replaced.



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Wesco is planning to begin treating the stockpiled soil within the Lined Soil Reclamation Area in May, 2018. As stated in the NOAV issued 9/19/2017 (document #401406173), Wesco has approval to treat the soil, but believes the treatment will occur more quickly and more effectively by beginning the work at the beginning of the warm season. In addition, during the hunting season there are landowner determined restrictions to the access of the heavy equipment needed for the soil treatment work. Wesco has and will continue to submit monthly status reports for the soil in the lined treatment area.

Wesco objects to the request to close the lined soil reclamation area. The reclamation area was permitted by both the BLM and COGCC when the location was owned by a previous operator. Copies of the approvals are included as Attachments #6 and #7. Wesco believes the lined area serves a valuable purpose in allowing the safe containment of the hydrocarbon contaminated soils generated occasionally during operation of the field. Wesco has worked to ensure the reclamation area is not overfilled, first by treating the soil then present in the reclamation area in a COGCC permitted land farm from 2012-2016 (currently proposed to the COGCC for closure), then by the planned treatment of the soil in spring, 2018 as discussed above. The storage area allows Wesco to accumulate enough soil for treatment to be able to economically justify in-field treatment of the soil with subsequent use of the soil in field. Absent the reclamation area, the hydrocarbon contaminated soil will be hauled offsite for burial at the landfill as it is generated. The reclamation area allows re-use of the soil after treatment rather than wasting the soil.

NOAV Comment #4

Rule 605D

In Operator's Rule 522.d.(2) NOAV Answer, Operator shall determine root cause of the failure and develop a written plan that addresses how reoccurrence of this failure in this and other Operator facilities in Colorado will be avoided in the future, to include engineering, integrity management, pigging and inspection protocols, pressure testing, operations, maintenance, corrosion, cathodic protection, management, and training actions, as necessary.



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Wesco Response

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The pipe that failed in both NOAVs was the 3" schedule 80 fusion bond pipe that Wesco replaced in 2014. This pipe is rated to a working pressure of 2600 psi and a burst pressure of 10,300 psi.

It appeared that both causes were from improper pipeline bedding, or rock movement. In both spills a rock was found lying against the side of the pipe and had worked through the Fusion Bond coating and ~0.31" of steel causing a pin hole leak. To alleviate future pipeline issues associated with the Maudlin Gulch # 18 well, Wesco will not use the Maudlin Gulch # 18 line until it can be replaced in its' entirety. Wesco has also developed the attached Pipeline Repair and Maintenance Procedure for all future pipeline installs to ensure proper pipeline installation and has developed the attached Pipeline Preventive Maintenance Program which will be followed at all Wesco fields in Colorado.

It is important to note that since taking over the Maudlin Gulch Field in 2010 Wesco has replaced 4.2 miles of pipeline with a Fiber Spar line, which is a spoolable corrosion resistant product. Past line issues have been caused by microbial corrosion and the replacement with Fiber Spar has eliminated those issues. When backfilling these line replacements, a hydraulic dirt sifter is used to ensure clean dirt is placed around the line. As the Maudlin Gulch #18 past repair was a short section of line, the rocks were sifted through by personal who must have missed the rocks causing the problems.

NOAV Comment #5

NOAV #401297902 – issued June 1st, 2017

Rule 906

Operator shall immediately submit a Form 19, Supplemental Spill/Release Report. Operator shall also submit a Form 27, Site Investigation and Remediation Work Plan to the COGCC as required by Rule 906. The Work Plan shall delineate the extent of the impacted area. In Operator's Rule 522.d.(2) NOAV answer, it shall provide a description of what steps Operator has taken to ensure that in the future all valves, pipes, and fittings are securely fastened, inspected at regular intervals, and maintained in good mechanical condition.

Wesco Response

At the time of the March spill and until the June spill, Wesco staff believed the Form 19S did not need to be submitted until and unless further information was available. The Form 19I submitted at the time of the spill included a topographic map with the spill path delineated along with Wesco's estimate of the spill volume. No further spill related information was generated. Prior to being issued the NOAV, Wesco had submitted a Form 27 on March 27th, 2017 which included a plan for the collection of a soil sample. As documented in the email from Dave Weinert to Kris Neidel dated June 6th, 2017, Wesco planned to collect the soil sample on Thursday June 8th. The June spill occurred on June 7th, 2017. If the soil sample had been collected, a supplemental Form 27 would have been submitted with the soil analysis results. For the June spill, the supplemental form 19S was submitted to the COGCC. In addition, the Form 27 and supplemental Form 27's have been submitted to the COGCC.

Wesco has had and maintains a Spill Prevention Control and Countermeasure Plan (SPCC) for the Maudlin/Danforth/Four Bear tank batteries. As part of the SPCC plan, staff are trained annually in spill prevention and cleanup methods. The SPCC also includes annual inspections of all the facilities including the flowlines.



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NOAV Comment #6

Rule 907

NOAV # 401406173

Operator will continue cleanup of impacted areas to meet the standards in Table 910-1, through soil investigation and remediation. In Operator's Rule 522.d.(2) NOAV Answer, it shall provide a description of what steps Operator has taken to ensure that in the future E&P waste is managed in a manner that protects waters of the state from significant adverse impacts.

Wesco Response

Based on the weekly visual inspections, surface water and soil laboratory analytical data previously submitted via Forms 27s, Wesco believes that the remediation of both releases is complete.

Wesco is not aware that any of the recovered wastes from either spill had impacted waters of the state. The hydrocarbon contaminated soil from both spills, currently stored in the reclamation area will be treated in accordance with the COGCC approval in spring, 2018. Since being notified by Alex Fischer with the COGCC that no additional material can be added to the reclamation area, Wesco has not and will not place any more material in the reclamation area until the COGCC has responded to our request (contained in this response) for continued use of the reclamation area. Wesco believes that the continued use of the lined, bermed soil reclamation area is the best method of managing E&P wastes in a manner that protects the waters of the state from significant adverse impacts.

Additional information

As described above, this letter represents Wesco's response to the NOAV's issued for the March 2017 and June 2017 spills.

The first spill, which occurred on March 6th, 2017, consisted of approximately 2 gallons of oil and 1 barrel of produced water. Wesco promptly reported the spill to the COGCC and immediately deployed staff with spill cleanup materials to mitigate the release. At the time of the spill, there was significant (50% or more) snow cover present in, over and around the impacted drainage,



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making spill path determination and mitigation much more difficult. In some areas of the drainage, Wesco staff located the both the drainage bottom and the spill path by hand digging through feet of snow to the bottom of the drainage. Wesco had scheduled the required soil sampling when the second, June spill occurred. There is no indication that the spill ever migrated further than was determined during the first response to the spill and documented in the Form 19 submitted the day after the spill was discovered.

The second spill occurred on June 7th, 2017 and consisted of approximately 2 barrels of oil and 10 barrels of produced water. Wesco promptly reported the spill and deployed staff and cleanup materials. There is no indication that the spill ever migrated further than was determined during the first response to the spill and documented in the Form 19s submitted after the spill was discovered. Since that event, the spill path has been washed, cleaned and inspected (36 times). Water and soil analysis that have been submitted via Form 27s's indicate that there is now no significant impact to the drainage.

In the course of the mitigation and cleanup of the spills, Wesco has spent over \$50,000 for the monitoring and cleanup of the approximately 14 barrels of spilled fluid. The cost (approximately \$3,600 per barrel of fluid spilled) indicates Wesco's dedication to the cleanup of spills. Wesco is incurring additional losses because of the lost production from the shut in well that uses the buried line. Wesco will also incur additional costs to replace the Maudlin Gulch #18 flowline. During the line replacement, Wesco staff will collect the required soil sample for analysis, resulting in further costs. Wesco has also committed to replacement of the buried line where the spill occurred before the line is placed back into use. This is the same line which was replaced in 2014, before either release occurred.

Wesco requests that the commission consider the effort and cost Wesco has expended to mitigate and cleanup these spills. We also request that they consider that both spills were reported voluntarily by Wesco. Finally, we request the commission consider Wesco's record as an operator in the State of Colorado. Our dedication to protecting the environment is demonstrated by the field wide line and facility replacement work (discussed above) completed before the spills at a cost in excess of \$700,000 and evidenced by the fact that in the period

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from January 1st, 2015 until the March, 2017 spill, Wesco had only one reportable spill in Colorado (December, 2015 – caused by a snowmobiler driving into a marked Wesco pipeline).

If you have any questions or require further information, please feel free to contact me at 307-577-5329 or at the address at the bottom of this letterhead.

Thank you for your consideration,



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Attachments

- 1 Pipeline Specification Sheet
- 2 Pipeline Repair and Replacement Procedure
- 3 Pipeline Preventive Maintenance Program
- 4 Inspection Log
- 5 October 3rd Inspection Photo Log
- 6 COGCC Approval of Lined Reclamation Area
- 7 BLM Approval of Lined Reclamation Area

Attachment #1
Pipeline Specification Sheet

Pressure Ratings of Steel Pipe

Based on ASTM A53 Grade B or A106 Grade B Seamless
ANSI B31.1, 1977 with allowances for connections and fittings
reduces these working pressures approx. 25%

PIPE		PRESSURE-PSI		WATER HAMMER FACTOR	PIPE		PRESSURE-PSI		WATER HAMMER FACTOR	
NOM. SIZE INCHES	SCH. NO.	WORKING	BURST		NOM. SIZE INCHES	SCH. NO.	WORKING	BURST		
1/8	40	3500	20,200	63.4	2 1/2	160	4200	15,700	5.43	
1/8	80	4800	28,000		2 1/2	XXS	6900	23,000	7.82	
1/4	40	2100	19,500		3	40	1600	7,400	2.60	
1/4	80	4350	26,400		3	80	2600	10,300	2.92	
3/8	40	1700	16,200		3	160	4100	15,000	3.56	
3/8	80	3800	22,500		3	XXS	6100	20,500	4.64	
1/2	40	2300	15,600		3 1/2	40	1500	6,800	1.94	
1/2	80	4100	21,000		3 1/2	80	2400	9,500	2.17	
1/2	160	7300	26,700		4	40	1400	6,300	1.51	
1/2	XXS	12300	42,100		4	80	2300	9,000	1.67	
3/4	40	2000	12,900	36.1	4	160	4000	14,200	2.08	
3/4	80	3500	17,600	44.5	4	XXS	5300	18,000	2.47	
3/4	169	8500	25,000	22.3	5	40	1300	5,500	.960	
3/4	XXS	10000	35,000		5	80	2090	8,100	1.06	
1	40	2100	12,100		5	160	3850	13,500	1.32	
1	80	3500	15,900		26.8	5	XXS	4780	16,200	1.49
1	160	5700	22,300		36.9	6	40	1210	5,100	.666
1	XXS	9500	32,700		68.3	6	80	2070	7,800	.738
1 1/4	40	1800	10,100		12.9	6	160	3760	13,000	.912
1 1/4	80	3000	13,900		15.0	6	XXS	4660	15,000	1.02
1 1/4	160	4400	18,100		18.2	8	40	1100	4,500	.385
1 1/4	XXS	7900	27,700		30.5	8	80	1870	6,900	.422
1 1/2	40	1700	9,100	9.46	8	160	3700	12,600	.529	
1 1/2	80	2800	12,600	10.9	8	XXS	3560	12,200	.519	
1 1/2	160	4500	17,700	13.7	10	40	1030	4,100	.244	
1 1/2	XXS	7200	25,300	20.3	10	*80	1800	6,600		
2	40	1500	7,800	5.74	10	160	3740	12,500	.340	
2	80	2500	11,000	6.52	10	XXS	3300	11,200		
2	160	4600	17,500	8.60	12	@40	1000	3,800		
2	XXS	6300	22,100	10.9	12	**80	1800	6,500		
2 1/2	40	1900	8,500	4.02	12	160	3700	12,300	.239	
2 1/2	80	2800	11,500	4.54	12	XXS	2700	9,400		

The allowable pressures were calculated by the formula in the Code for Pressure Piping, ASA B31.1-1955, Section 3, par. 324(a),

$$P = \frac{25(t-C)}{D-2y(t-C)}$$

where P = allowable pressure in lb per sq in. (gauge)
 S = allowable working stress in lb per sq in.
 D = outside diameter in inches
 t = design thickness in inches, or 12 1/2% less than the nominal thickness shown in the table
 C = allowance in inches for corrosion and/or mechanical strength (C=0.05" has been used above for all pipe sizes)
 y = a coefficient having values for ferritic steels, as follows:

- 0.4 up to and including 900°F
- 0.5 for 950°F
- 0.7 for 1000°F and above

The allowable working stresses were obtained from the Code for Pressure Piping, ASA B31.1-1955, Table 12.

Hydraulic machinery piping is not covered by the Code for Pressure Piping, but it is current practice to use stresses comparable with those given for Refinery and Oil Transportation Piping, Div. A. The allowable working

pressures at 100°F tabulated above accordingly may be used, provided that water hammer or shock conditions are considered by reducing these values by the product of the flow rate in gallons per minute and the Water Hammer Factor tabulated above.

Thus if the flow rate is 100 gpm in a 2" extra strong line, the shock pressure created by water hammer is 100 x 6.52 = 652 lbs. per sq. in.; by deducting this from the value of 2500 lb per sq in. shown in the table the allowable static working pressure is found to be 1848 lb per sq in.

Burst pressures for pipe were calculated using formula

$$P = \frac{25t}{OD}$$

Where P = internal burst pressure, psig
 S = allowable stress (60,000 psi)
 OD = outside diameter of tube in inches
 t = nominal wall thickness

NOTES: *Not extra strong. Schedule 60 is extra strong in this size.

** Not extra strong. Extra strong does not have a schedule number in this size! (ID of 12" XS is 11.75 Inches)

@ Not standard weight. Standard weight does not have a schedule number in this size! (ID of 12" Standard is 12.00 Inches).

Steel Pipe - Size, Schedule and Flow Rates

Standard Pipe - Schedule 40

PIPE SIZE	OD	WALL	ID	INT AREA	WT/ FT	GPM @ 2 FPS	GPM @ 5 FPS	GPM @ 10 FPS	GPM @ 15 FPS	GPM @ 20 FPS	GPM @ 25 FPS
1/8	.405	.068	.269	.057	.245	.35	.89	1.8	2.7	3.5	4.4
1/4	.540	.088	.364	.104	.425	.65	1.6	3.2	4.9	6.5	8.1
3/8	.675	.091	.493	.191	.567	1.2	3.0	6.0	9.0	12.0	15.0
1/2	.840	.109	.622	.304	.852	1.9	4.8	9.5	12.0	19.0	23.8
3/4	1.050	.113	.824	.593	1.132	3.3	8.4	16.7	25.1	33.4	41.8
1	1.315	.133	1.049	.864	1.679	5.4	13.5	27.0	40.6	54.1	67.7
1 1/4	1.660	.140	1.380	1.495	2.273	9.4	23.4	46.8	70.3	93.7	117
1 1/2	1.900	.145	1.610	2.036	2.718	12.7	31.9	63.7	95.6	127	159
2	2.375	.154	2.067	3.356	3.653	21.0	52.5	105	157	210	263
2 1/2	2.875	.208	2.469	4.788	5.793	30.0	75.0	150	225	300	375
3	3.500	.216	3.068	7.393	7.575	46.3	116	232	347	463	579
3 1/2	4.000	.226	3.540	9.806	9.109	61.9	155	310	465	619	774
4	4.500	.237	4.026	12.73	10.79	79.7	199	399	598	797	997
4 1/2	5.000	.247	4.506	15.95	12.54	99.9	250	499	749	998	1249
5	5.563	.258	5.047	20.01	14.62	125	313	627	940	1253	1567
6	6.625	.280	6.065	28.89	18.97	181	452	904	1357	1810	2262
7	7.625	.301	7.023	38.74	23.54	243	607	1213	1820	2427	3033
8	8.625	.322	7.981	50.03	28.55	313	783	1567	2350	3134	3917
10	10.75	.365	10.02	78.85	40.48	494	1235	2470	3705	4940	6175
12	12.75	.406	11.94	111.9	53.56	701	1753	3506	5259	7012	8765

Extra Strong Pipe - XS - Schedule 80

WALL	ID	INT AREA	WT/ FT	GPM @ 2 FPS	GPM @ 5 FPS	GPM @ 10 FPS	GPM @ 15 FPS	GPM @ 20 FPS	GPM @ 25 FPS	PIPE SIZE
.095	.215	.036	.314	.23	.57	1.1	1.7	2.3	2.8	1/8
.119	.302	.072	.535	.45	1.1	2.2	3.4	4.5	5.6	1/4
.126	.423	.141	.738	.88	2.2	4.4	6.6	8.8	11.0	3/8
.147	.546	.234	1.087	1.5	3.7	7.3	11.0	14.7	18.3	1/2
.154	.742	.433	1.473	2.7	6.8	13.6	20.3	27.1	33.9	3/4
.179	.957	.719	2.171	4.5	11.3	22.5	33.8	45.0	56.3	1
.191	1.278	1.283	2.996	8.0	20.0	40.1	60.2	80.3	100	1 1/4
.200	1.500	1.767	3.631	11.1	27.7	55.3	83.0	110	138	1 1/2
.218	1.939	2.953	5.022	18.5	46.2	92.5	139	185	231	2
.276	2.323	4.238	7.661	26.5	66.4	133	199	265	332	2 1/2
.300	2.900	6.605	10.25	41.4	103	207	310	414	517	3
.310	3.364	8.888	12.50	55.7	139	278	418	557	696	3 1/2
.337	3.826	11.50	14.98	72.0	180	360	540	720	900	4
.355	4.290	14.45	17.61	90.5	226	453	679	905	1132	4 1/2
.375	4.813	18.19	20.78	114	285	570	855	1140	1425	5
.432	5.761	26.07	28.57	163	408	816	1225	1633	2041	6
.500	6.625	34.47	38.05	216	540	1080	1620	2160	2699	7
.500	7.625	45.66	43.39	286	715	1430	2145	2861	3576	8
.594	9.562	71.81	64.40	450	1125	2249	3374	4498	5623	10
.688	11.37	101.61	88.57	636	1591	3182	4774	6365	7956	12

Schedule 160 Pipe

PIPE SIZE	OD	WALL	ID	INT AREA	WT/ FT	GPM @ 2 FPS	GPM @ 5 FPS	GPM @ 10 FPS	GPM @ 15 FPS	GPM @ 20 FPS	GPM @ 25 FPS
1/2	.840	.187	.466	1.71	1.310	1.07	2.67	5.34	8.01	10.7	13.4
3/4	1.050	.218	.587	2.71	1.940	1.70	4.24	8.49	12.7	17.0	21.2
1"	1.315	.250	.815	5.22	2.850	3.27	8.17	16.3	24.5	32.7	40.8
1 1/4	1.660	.250	1.160	1.060	3.764	6.62	16.6	33.1	49.7	66.2	82.8
1 1/2	1.900	.281	1.338	1.410	4.862	8.81	22.0	44.0	66.1	88.1	110
2	2.375	.343	1.689	2.241	7.450	14.0	35.1	70.2	105	140	175
2 1/2	2.875	.375	2.125	3.542	10.01	22.2	55.5	111	167	222	278
3	3.500	.437	2.626	5.416	14.30	33.9	84.8	170	254	339	424
4	4.500	.531	3.438	9.283	22.52	58.2	145	291	436	582	727
5	5.563	.625	4.313	14.61	33.0	91.5	229	458	686	915	1144
6	6.625	.718	5.189	21.15	45.30	132	331	662	994	1325	1656
8	8.625	.906	6.813	36.44	74.70	230	571	1142	1713	2384	2855
10	10.75	1.125	8.500	56.75	115.64	355	889	1777	2666	3555	4443
12	12.75	1.312	10.126	80.53	160.33	504	1261	2523	3784	5045	6306

Double Extra Strong Pipe

WALL	ID	INT AREA	WT/ FT	GPM @ 2 FPS	GPM @ 5 FPS	GPM @ 10 FPS	GPM @ 15 FPS	GPM @ 20 FPS	GPM @ 25 FPS	PIPE SIZE
.294	.252	.050	1.714	.32	.79	1.6	2.4	3.1	3.9	1/2
.308	.434	.148	2.440	.93	2.3	4.6	6.9	9.2	11.6	3/4
.368	.599	.282	3.659	1.8	4.4	8.8	13.3	17.7	22.1	1"
.382	.896	.630	5.214	4.0	9.9	19.8	29.6	39.5	49.4	1 1/4
.400	1.100	.950	6.400	6.0	14.9	29.8	44.6	59.5	74.4	1 1/2
.436	1.503	1.774	9.029	11.1	27.9	55.6	83.4	111	139	2
.552	1.771	2.463	13.70	15.4	38.6	77.1	116	154	193	2 1/2
.600	2.300	4.154	18.50	26.0	65.1	130	195	260	325	3
.674	3.152	7.803	27.54	40.9	122	244	367	488	611	4
.750	4.063	12.07	38.55	61.2	203	406	609	812	1015	5
.864	4.897	18.83	53.16	118	295	590	885	1180	1475	6
.875	6.875	37.12	72.42	233	581	1163	1744	2325	2907	8
1.000	8.750	60.13	104.1	377	942	1883	2825	3767	4709	10
1.000	10.75	90.76	125.5	569	1421	2843	4264	5686	7107	12

Attachment #2
Pipeline Repair and Replacement Procedure

Proper Pipe Repair and Replacement Procedure

Line Repair

- 1) Identify leak interval, trench back along pipe to allow for safe work. Remove any contaminated soil and dispose of at an appropriate disposal site
- 2) Clamp off pipe with temporary clamp and flush with fresh water
- 3) Cut out bad section of line, inspect line and determine cause. If cause is determined to be localized replace bad section of line.
- 4) Pressure up on line to 2 times operating pressure
- 5) Backfill line with soil, ensuring to keep rocks away from line.

Line Replacement

- 1) Identify leak interval, trench back along pipe and allow for safe work. Remove any contaminated soil and dispose of at an appropriate disposal site.
- 2) Clamp off on pipe with temporary clamp and flush line with 2 times fresh water volume.
- 3) Permanently cap line ends or remove if possible.
- 4) Install new pipeline in trench ensure no rocks are directly under.
- 5) Using a hydraulic sifter to bed at least 1.5 ft of clean soil on top of flow line.
- 6) Backfill and seed.
- 7) Pressure test to the new pipeline spec's maximum working pressure or as dictated by the pipe supplier. Ensure all valves and connections are rated to testing pressure prior to testing.

Attachment #3
Pipeline Preventive Maintenance Program

Pipeline Preventive Maintenance Program

In efforts to minimize the risk of pipeline leaks Wesco has developed the following preventative maintenance program for wells located in Colorado:

The program will be dependent on the corrosive nature of the water in the area. As with Maudlin Gulch the waters are prone to microbial corrosion. To alleviate this Wesco has replaced 4.3 miles of pipeline throughout the field with corrosion resistant Fiberglass lines. Wesco will replace the Maudlin Gulch # 18 line prior to reactivating the well. Wesco will continue on a field by field and well by well basis to monitor flowlines and valves where above ground for signs of corrosion as indications that the lines need to be replaced.

Wesco shall implement a chemical program to ensure proper corrosion treatment is happening. Chemical residuals, iron counts, and corrosion coupons will be monitored and chemical adjusted as dictated by testing.

Annual pressure testing shall be performed as required by COGCC rule and both a digital and paper copy will be maintained.

Where practical cathodic protection will be installed and monitored by a cathodic expert.

All Wesco Employees will be trained in SPCC and have a Hazmat training. They will be trained in spill response, volume estimating, Haz-com, and H2S where applicable. Wesco Employees are required to keep a clean field and encouraged to bring up any potential concerns in monthly safety meetings.

Where Wesco has a small footprint and a contract pumper is used. They have agreed to follow Wesco Safety and Environmental policies and are monitored by a field supervisor on a regular basis.

Attachment #4
Inspection Log

Maudlin Gulch #18 Flowline Leak Spill Path Inspection record

During each of the events listed below, Wesco staff walked the entire length of the spill path looking for oil present on the water or stained vegetation. Absorbent booms and pads were placed or replaced as needed.

Inspection Date	Inspection Time	Comments
6/7/2017	11 am	
6/8/2017	1:30 pm	
6/9/2017	10:00 am	
6/10/2017	11:00 am	
6/11/2017	12:30 pm	
6/12/2017	2:30 pm	
6/13/2017	11:30 am	
6/14/2017	10:30 am	
6/16/2017	1:00 pm	
6/18/2017	11:30 am	
6/20/2017	12 Pm	
6/21/2017	11:30 am	
6/23/2017	1:30 pm	
6/25/2017	3 :30 pm	
6/27/2017	11:45 am	
6/29/2017	10 :30 am	
7/1/2017	11 am	
7/3/2017	12:30 pm	
7/5/2017	2:30 pm	
7/6/2017	1:00 pm	No oil observed
7/8/2017	11 am	No oil observed
7/10/2017	12:45 pm	No oil observed
7/12/2017	10:45 am	No oil observed
7/13/2017	10:15 am	No oil observed
7/15/2017	10:30 am	No oil observed
7/16/2017	11:15 am	No oil observed
7/18/2017	10 am	No oil observed
7/25/2017	9:50 am	No oil observed
8/1/2017	1:00 pm	No oil observed
8/8/2017	11 am	No oil observed
8/15/2017	11:30 am	No oil observed
8/22/2017	2 pm	No oil observed
8/28/2017	1 pm	No oil observed
9/21/2017	10:40 am	No oil observed
10/3/2017	1:00 pm	No oil observed
10/14/2017		No oil observed

Attachment #5
October 3rd Inspection Photo Log

**MAUDLIN GULCH UNITS
WESCO OPERATING, INC.**

AUGUST 28 THROUGH NOVEMBER 31

-ATTENTION-
WESCO EMPLOYEES
AND VENDORS
NO ENTRANCE ~~OR EXIT~~
BEFORE 8:00am

PHOTO 2017 09:59





















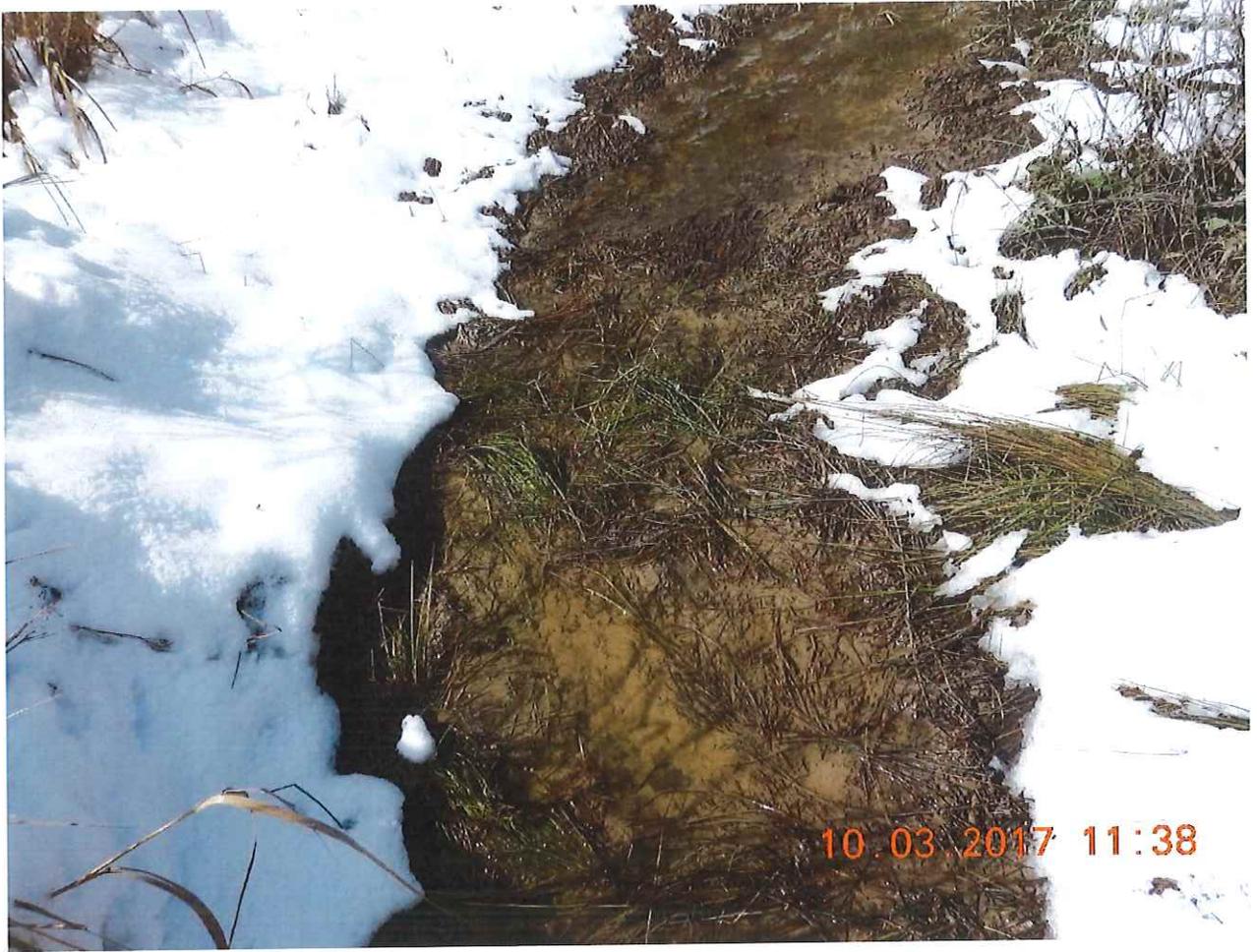
















































Attachment #6
COGCC approval of Lined Soil Reclamation Area

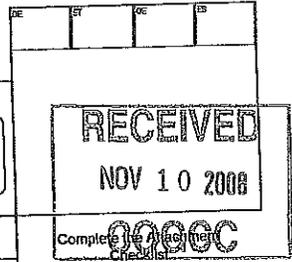
State of Colorado Oil and Gas Conservation Commission

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



SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)



1. OGCC Operator Number: 100116
2. Name of Operator: Wold Oil Properties, Inc.
3. Address: 139 W. 2nd Street, Suite 200
4. Contact Name: Robert A. King, Agent
5. API Number: 05-081-06003
6. Well/Facility Name: Maudlin Gulch Facility
7. Well/Facility Number:
8. Location: NW/SE Sec 26 T4N R95W 6 pm
9. County: Moffat
10. Field Name:
11. Federal, Indian or State Lease Number:
OGCC Facility ID Number:
Survey Plat:
Directional Survey:
Surface Eqm't Diagram:
Technical Info Page:
Other:

General Notice

CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)
CHANGE SPACING UNIT
CHANGE OF OPERATOR (prior to drilling):
CHANGE WELL NAME
ABANDONED LOCATION:
NOTICE OF CONTINUED SHUT IN STATUS
SPUD DATE:
REQUEST FOR CONFIDENTIAL STATUS
SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK
RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.

Technical Engineering/Environmental Notice

Notice of Intent
Report of Work Done
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)
Intent to Recomplete (submit form 2)
Request to Vent or Flare
E&P Waste Disposal
Change Drilling Plans
Repair Well
Beneficial Reuse of E&P Waste
Gross Interval Changed?
Rule 502 variance requested
Status Update/Change of Remediation Plans
Casing/Cementing Program Change
Other:
for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Robert A. King Date: 11/5/08 Email:
Print Name: Robert A. King Title: Agent

COGCC Approved: David S. Neslin Title: RH Date: 3/5/2009

CONDITIONS OF APPROVAL, IF ANY:

FORM
4
Rev 12/05

Page 2

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

RECEIVED
NOV 10 2008
COGCC

1. OGCC Operator Number: 100116 API Number: _____

2. Name of Operator: Wold Oil Properties, Inc. OGCC Facility ID # _____

3. Well/Facility Name: Maudlin Gulch Facility Well/Facility Number: _____

4. Location (QtrQtr, Sec, Twp, Rng, Meridian): NW/SW Sec. 26 T4N R95W 6 pm

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

DESCRIBE PROPOSED OR COMPLETED OPERATIONS

5. Wold Oil Properties, Inc. has replaced all of the water and oil tanks at the Maudlin Gulch Tank Battery Facility with new tankage. The site of the old tanks has been excavated and lined, and will be used as an impacted soil remediation site (land farm). The surface owner, Colowyo Coal Co., has reviewed this plan and is in agreement with it. Attached is a schematic of the new facility

Attachment #7

BLM approval of Lined Soil Reclamation Area

WOLD OIL PROPERTIES, INC.

MINERAL RESOURCE CENTER - SUITE 200

139 WEST SECOND STREET
CASPER, WYOMING 82601

TELEPHONE (307) 265-7252
FAX (307) 265-7336
E-Mail: wopi@woldoil.com
www.woldoil.com

PETER I. WOLD

JACK WOLD

July 16, 2008

Colorado Oil & Gas Conservation Commission
707 Wapiti Ct. #204
Rifle, CO 81650
Attn: Chris Canfield

Re: Maudlin Gulch Unit

Gentlemen:

Wold Oil Properties, Inc. proposes to install a soil remediation site within the existing boundaries of its Maudlin Gulch Unit Tank Battery in order to stockpile oil-contaminated soils as part of its plan to replace existing oil and water storage tanks with new tankage.

Wold's plan is to set eight new 400-barrel welded steel tanks (four oil tanks and four water tanks) immediately adjacent to and east of the existing tanks, and remove the existing four 1000 barrel bolted tanks and three 400 barrel welded tanks which are in unacceptable condition. The location of the new tanks will be within the existing bermed area, which will be lined with a 40-mil liner. The attached Figure 1 is a diagram of the facility layout as proposed.

Wold proposes to remove the contaminated soils that exist currently underneath the existing tanks, lay a 40-mil liner down on clean soil, and replace the contaminated soil within the bermed area in order to landfarm and remediate the soil by acceptable landfarm procedures. The entire landfarm area will be enclosed within a 45' x 120' x 3' deep berm and monitored daily. Natural drainage will be diverted away from the landfarm site.

Soils temporarily stored at the abandoned Stroock Tank Battery, approximately 200 yards to the south of the Maudlin Gulch facility, will be relocated to the new Maudlin Gulch remediation site for storage and treatment.

Wold is currently in the process of rebuilding the Maudlin Gulch Tank Battery in order to repair leaks and replace the current equipment, and your timely approval of this proposal will be appreciated.

Sincerely,



Robert A. King, Agent for
WOLD OIL PROPERTIES, INC.

Cc: Robert Chesson, COGCC
Attachment

1775 SHERMAN STREET
SUITE 1700
DENVER, COLORADO 80203

DENVER OFFICE:

TELEPHONE: (303) 831-0575
FAX: (303) 831-0607
E-mail: wopiden@aol.com

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. COC47649X
2. Name of Operator Wold Oil Properties, Inc.		6. If Indian, Allottee, or Tribe Name
3a. Address 139 W. 2nd Street, Suite 200 Casper, WY 82601		7. If Unit or CA. Agreement Name and/or No. Maudlin Gulch Unit
3b. Phone No. (include area code) (307) 265-7252		8. Well Name and No. Battery
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) SW/4 NW/4 Sec. 26 T4N R9SW		9. API Well No.
		10. Field and Pool, or Exploratory Area Maudlin Gulch
		11. County or Parish, State Moffat County, CO

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/ Resume)	<input type="checkbox"/> Water Shut-off	
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and abandon	<input type="checkbox"/> Temporarily Abandon	Facility Oil Spill	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug back	<input type="checkbox"/> Water Disposal		

13. Describe Proposed or Completed Operation (clearly state all pertinent details including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplate horizontally, give subsurface locations and measured and true vertical depths or pertinent markers and sands. Attach the Bond under which the work will performed or provide the Bond No. on file with the BLM/ BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

Wold Oil Properties, Inc. has re-activated the previously approved soil remediation site located adjacent to the Maudlin Gulch tank battery, on the abandoned "Stroock" tank battery site. Oil-contaminated soils from the Maudlin Gulch tank battery spill that occurred in December 2007 have been stock-piled at the Stroock site, and will be remediated by approved land-farm methods.

RECEIVED
 BLM LITTLE SNAKE FLD
 CRAIG, COLORADO 81625
 2008 JUN 19 AM 12:45

14. I hereby certify that the foregoing is true and correct.

Name (Printed/ Typed) Robert A. King	Title Agent for Wold Oil Properties, Inc.
Signature <i>Robert A. King</i>	Date June 16, 2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by <i>[Signature]</i>	Title ASSISTANT FIELD MANAGER	Date JUL 22 2008
Conditions of approval, if any are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office Bureau of Land Management Little Snake Field Office	

Title 18 U.S.C. Section 1001 AND Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

CONDITIONS OF APPROVAL
ATTACHED

FIGURE 1

MAUDLIN GULCH UNIT
TANK BATTERY &
SOIL RECLAMATION FACILITY
NW/SW SECTION 26 T4N R95W 6PM
MOFFAT COUNTY, COLORADO

RECEIVED
NOV 10 2008
COGCC

ACCESS ROAD

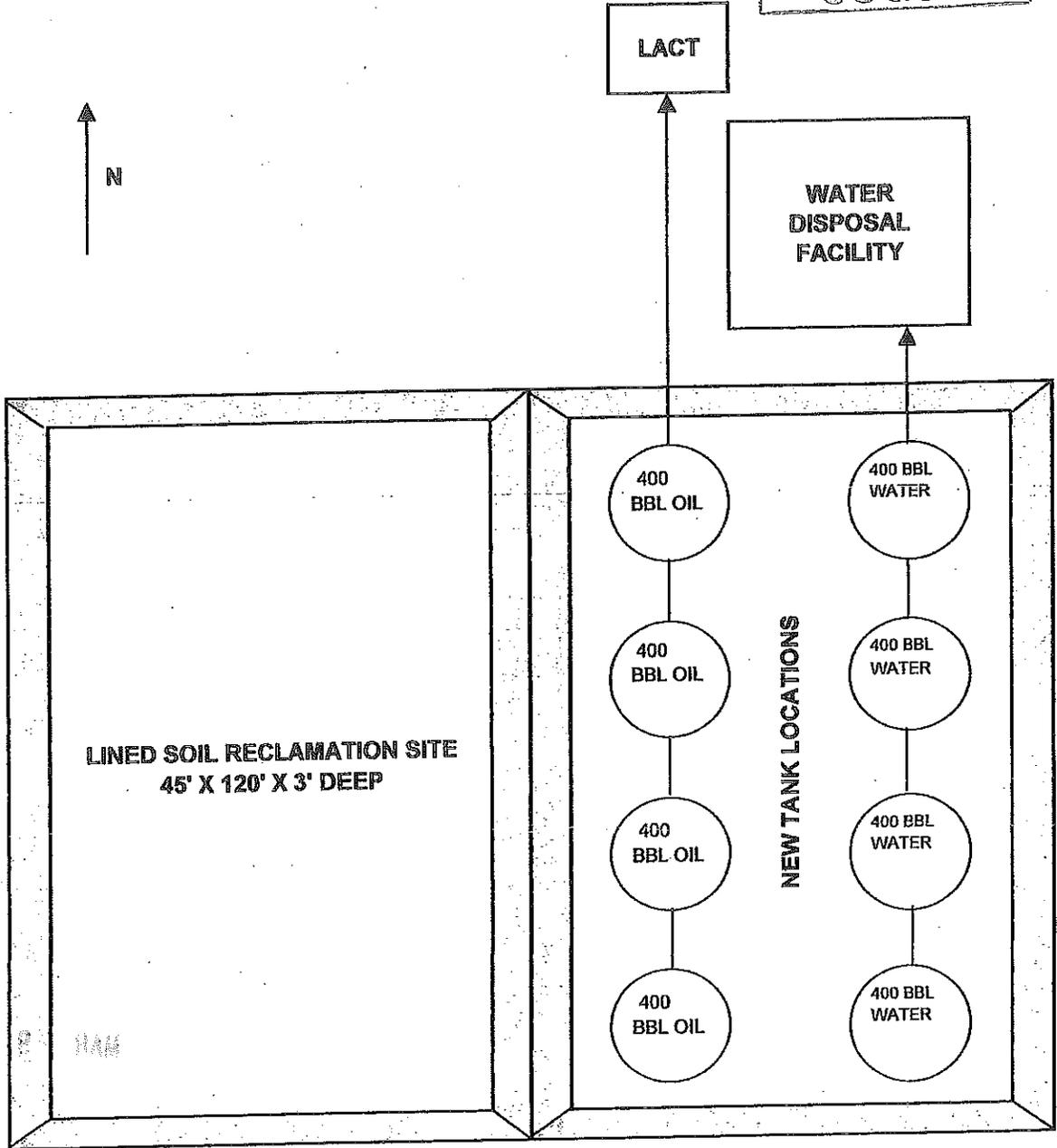
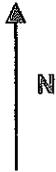


FIGURE 1

**MAUDLIN GULCH UNIT
PROPOSED TANK BATTERY &
SOIL RECLAMATION FACILITY
NW/SW SECTION 26 T4N R95W 6PM
MOFFAT COUNTY, COLORADO**

