

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
FAX: (303) 832-8106



April 3, 2014

Mr. Florentino Vuelvas
Shell Exploration and Production Company
Shell Technology Center – Houston – M1074A
3333 Highway 6 South
Houston, TX 77082-3101

John W. Hickenlooper
Governor

Mike King
Executive Director

Loretta Piñeda
Director

Re: Shell Frontier Oil & Gas Inc., Notice of Intent (NOI) P-2009-024, Modification No. 1 Request Approval.

Mr. Vuelvas:

The Division of Reclamation, Mining and Safety has completed the review of the above referenced Notice of Intent modification application. It appears that the request meets the requirements of the Act and Rules. Therefore, staff is pleased to inform Shell Frontier Oil and Gas Inc. that Modification No. 1 is approved.

Modification No. 1 addresses the following:

- Removal of all uninstalled and undrilled boreholes from the Notice of Intent.

The terms of the Modification No. 1 approved by the Division are hereby incorporated into Permit No. P-2009-024. All other conditions and requirements of Permit No. P-2009-024 remain in full force and effect.

The Division has determined the current final reclamation cost to be \$244,797.39. The Division currently holds a statewide reclamation bond of \$28,000,000.00 for prospecting on public land which is adequate to reclaim the site.

If you need additional information, please contact me at the Division of Reclamation, Mining and Safety, Grand Junction Field Office, 101 S. 3rd St., Suite 301, Grand Junction, Colorado 81501, telephone no. 970.241.2042.

Sincerely,

A handwritten signature in black ink, appearing to read "Travis Marshall", written over a horizontal line.

Travis Marshall
Environmental Protection Specialist

cc: Russ Means, DRMS

Paul Daggett
BLM-WRFO
220 East Market Street
Meeker, CO, 81641

Enclosure(s): Updated Final Reclamation Cost Estimate

COST SUMMARY WORK

Task description: Final reclamation cost estimate.

Site: 2009-10 RD&D East Lease Appraisal Permit Action: MD-1 Permit/Job#: P2009024

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 4/3/2014 County: Rio Blanco Filename: P024-001
User: THM

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Demolition and disposal of fences, drill cuttings and liners	DEMOLISH	1	12.90	\$6,208.92
02a	Borehole P&A	BOREHOLE	1	204.65	\$146,106.55
03a	Regrade drill pads and associated access roads.	DOZER	3	20.24	\$12,027.88
04a	Rip drill pads and associated access roads.	RIPPER	3	2.35	\$1,490.00
05a	Spread topsoil on drill pads and associated access roads.	DOZER	3	4.74	\$2,815.92
06a	Revegetate drill pads and associated access roads	REVEGE	1	4.21	\$6,247.59
07a	Mobilization	MOBILIZE	1	8.00	\$10,919.48
<u>SUBTOTALS:</u>				257.09	\$185,816.34

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02%	Total =	\$3,753.49
Performance bond:	1.05%	Total =	\$1,951.07
Job superintendent:	128.55 hrs	Total =	\$8,408.13
Profit:	10.00%	Total =	\$18,581.63
		TOTAL O & P =	\$32,694.32
		CONTRACT AMOUNT (direct + O & P) =	\$218,510.66

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	4.25%	Total =	\$9,286.70
Reclamation management and/or administration:	5.00%		\$10,925.53

CONTINGENCY: 3.00 Total = \$5,574.49

TOTAL INDIRECT COST = \$58,981.05

TOTAL BOND AMOUNT (direct + indirect) = \$244,797.39

DEMOLITION WORK

Task description: Demolition and disposal of fences, drill cuttings and liners

2009-10 RD&D East Lease
Site: Appraisal

Permit Action:
MD-1

Permit/Job#: P2009024

PROJECT IDENTIFICATION

Task #: 01A
Date: 4/3/2014
User: THM

State: Colorado
County: Rio Blanco

Abbreviation: None
Filename: P024-01a

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 98.20 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Pad 135-4-298 pit fence removal	280 LF, 5 strand barbed	Fencing, barbed wire, - 5 strand	280.00	LF	\$2.01	\$562.80
Pad 135-4-298 drill cuttings removal-load material into truck	25 cy max.	Cat 311D LRR 8'-6"Stick	1.00	EA	\$78.79	\$78.79
Pad 135-4-298 haul cuttings to public landfill	37.5 tons	USER PROVIDED ITEM	2.00	load	\$1,239.47	\$2,478.94
Pad 135-4-298 dump fees	25 cy max	Dump fees - Reclamation station, usual charge	25.00	CY	\$82.00	\$2,050.00
Pad 135-4-298 pnd liner removal	20' x 20' x 14' w/ 6' top	USER PROVIDED ITEM	2,000.00	SF	\$0.29	\$589.40
PAd 138-4-298 pit fence removal	280 LF	Fencing, barbed wire, - 5 strand	280.00	LF	\$2.01	\$562.80

Job Hours: 12.90

Subtotal
(unadjusted): \$6,322.73

Total Cost
(adjusted for location): \$6,208.92

BOREHOLE SEALING WORK

Task description: Borehole P&A

2009-10 RD&D East Lease
Site: Appraisal

Permit Action:
MD-1

Permit/Job#: P2009024

PROJECT IDENTIFICATION

Task #: 02A
Date: 4/3/2014
User: THM

State: Colorado
County: Rio Blanco

Abbreviation: None
Filename: P024-02a

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
135-4-298-SAW-1	USER PROVIDED ITEM	NA	NA	1.00	well	\$44,890.00	\$44,890.00
135-4-298-SAW-2-L4	USER PROVIDED ITEM	NA	NA	1.00	well	\$23,637.00	\$23,637.00
138-4-298-UT	USER PROVIDED ITEM	NA	NA	1.00	well	\$11,263.00	\$11,263.00
138-4-298-A	USER PROVIDED ITEM	NA	NA	1.00	well	\$13,097.00	\$13,097.00
138-4-298-B	USER PROVIDED ITEM	NA	NA	1.00	well	\$15,011.00	\$15,011.00
138-4-298-L-5	USER PROVIDED ITEM	NA	NA	1.00	well	\$16,371.00	\$16,371.00
138-4-298-L4	USER PROVIDED ITEM	NA	NA	1.00	well	\$20,118.00	\$20,118.00
Pad 135-4-298 surface casing removal	USER PROVIDED ITEM	NA	NA	2.00	hole	\$245.65	\$491.30
Pad 199-4-298 surface casing removal	USER PROVIDED ITEM	NA	NA	5.00	hole	\$245.65	\$1,228.25

Job Hours: 204.65

Total Cost: \$146,106.55

BULLDOZER WORKTask description: Regrade drill pads and associated access roads.Site: 2009-10 RD&D East Lease
AppraisalPermit Action: MD-1Permit/Job#: P2009024**PROJECT IDENTIFICATION**Task #: 03A
Date: 4/3/2014
User: THMState: Colorado
County: Rio BlancoAbbreviation: None
Filename: P024-03aAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$56.69</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$104.03</u>	<u>100</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$37.41</u>	<u>NA</u>

Total unit Cost/Hour: \$198.13
Total Fleet Cost/Hour: \$594.39**MATERIAL QUANTITIES**Initial Volume: 13,584
Swell factor: 1.125
Loose volume: 15,282 LCYSource of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 135 feet
Unadjusted hourly production: 689.5 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 5 %
Average site altitude: 6,800 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>0.900</u>	<u>(CAT HB))</u>

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3651

Adjusted unit production: 251.74 LCY/hr

Adjusted fleet production: **755.22** LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)

Unit cost: \$0.787/LCY

Total job time: **20.24** Hours

Total job cost: **\$12,027.88**

BULLDOZER RIPPING WORK

Task description: Rip drill pads and associated access roads.

2009-10 RD&D East Lease Permit Action: MD-1 Permit/Job#: P2009024
Site: Appraisal

PROJECT IDENTIFICATION

Task #: 04A State: Colorado Abbreviation: None
Date: 4/3/2014 County: Rio Blanco Filename: P024-04a
User: THM

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU Horsepower: 310
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$63.00	NA
Operating Cost/Hour:	\$104.03	100
Ripper Operating Cost/Hour:	\$6.53	100
Operator Cost/Hour:	\$37.41	NA
Total Unit Cost/Hour:	\$210.98	
Total Fleet Cost/Hour:	\$632.95	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 4.71 acres Rip Depth (ft): 1.50 Volume: 11,398 BCY or CCY

Source of estimated quantity: Total estimated disturbance

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 1.50 mph
Average Ripping Width: 7.08 degrees
Average Ripping Length: 325.00 feet
Average Dozer Speed: 88.00 feet
Average Maneuver Time: 0.25 feet
Production per unit area: 0.804 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.804 Acres/hr
Site Altitude: 6,600 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.67 Acres/hr
Adjusted Hourly Fleet Production: 2.00 Acres/hr

JOB TIME AND COST

Fleet size: 3 Grader(s) Total job time: 2.35 Hours

Unit cost: \$316.250 Per acre Total job cost: \$1,490.00

BULLDOZER WORKTask description: Spread topsoil on drill pads and associated access roads.Site: 2009-10 RD&D East Lease
AppraisalPermit Action: MD-1Permit/Job#: P2009024**PROJECT IDENTIFICATION**Task #: 05A
Date: 4/3/2014
User: THMState: Colorado
County: Rio BlancoAbbreviation: None
Filename: P024-05aAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SU
Horsepower: 310
Blade Type: Semi-Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$56.69	NA
Operating Cost/Hour:	\$104.03	100
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$37.41	NA

Total unit Cost/Hour: \$198.13
Total Fleet Cost/Hour: \$594.39**MATERIAL QUANTITIES**Initial Volume: 3,396
Swell factor: 1.115
Loose volume: 3,787 LCYSource of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 175 feet
Unadjusted hourly production: 562.2 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: 5 %
Average site altitude: 6,600 feetMaterial weight: 2,100 lbs/LCYWeight description: Earth - Loam**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.100</u>	<u>(CAT HB)</u>

Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.700	(FND-MF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4739

Adjusted unit production: 266.43 LCY/hr

Adjusted fleet production: 799.29 LCY/hr

JOB TIME AND COST

Fleet size: 3 Dozer(s)

Unit cost: \$0.744/LCY

Total job time: 4.74 Hours

Total job cost: \$2,815.92

REVEGETATION WORKTask description: Revegetate drill pads and associated access roads2009-10 RD&D East Lease
Site: AppraisalPermit Action:
MD-1Permit/Job#: P2009024**PROJECT IDENTIFICATION**Task #: 06A
Date: 4/3/2014
User: THMState: Colorado
County: Rio BlancoAbbreviation: None
Filename: P024-06aAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
6-6-6	800.00	pound	\$0.16	\$126.40
			Total Fertilizer Materials Cost/Acre	\$126.40

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$52.71
Total Fertilizer Application Cost/Acre	\$52.71

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$98.01
Total Tilling Cost/Acre	\$98.01

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alfalfa - Common	2.00	9.64	\$5.10
Indian Ricegrass - Paloma	1.00	3.24	\$8.71
Bluebunch Wheatgrass - Secar	2.00	6.43	\$13.68
Thickspike Wheatgrass - Critana	2.00	7.07	\$10.34
Needle and Thread	1.00	2.64	\$46.99
Western Wheatgrass - Rosanna	2.00	5.05	\$7.02
Saltbush, Four Wing	0.50	0.69	\$5.37
Globemallow, Munro	0.50	5.66	\$40.87
Totals Seed Mix	11.00	40.42	\$138.07

Application

Description	Cost /Acre
Drill seeding (DRMS Cost Data)	\$88.20
Total Seed Application Cost/Acre	\$88.20

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost / Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	\$1.23	\$1.23
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$265.00	\$530.00
Total Mulch Materials Cost/Acre				\$531.23

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$65.89
Power mulcher (MEANS 32 91 13.16 0250)	\$86.68
Total Mulch Application Cost/Acre	\$152.57

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
Totals Nursery Stock Cost / Acre					\$0.00

JOB TIME AND COST

No. of Acres:	4.21	Cost /Acre:	\$1,187.19
Estimated Failure Rate:	25%	Cost /Acre*:	\$1,187.19
*Selected Replanting Work Items:	FERTILIZING,TILLING,SEEDING,MU LCHING		

Initial Job Cost:	\$4,998.07
Reseeding Job Cost:	\$1,249.52
Total Job Cost:	\$6,247.59
Job Hours:	4.21

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilization**2009-10 RD&D East Lease
Site: **Appraisal**Permit Action:
MD-1Permit/Job#: **P2009024****PROJECT IDENTIFICATION**Task #: **07A**
Date: **4/3/2014**
User: **THM**State: **Colorado**
County: **Rio Blanco**Abbreviation: **None**
Filename: **P024-07a**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**
Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER
(25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8SU	47.71	\$56.69	\$117.55	3	\$522.71	\$352.65	\$750.00
Cat 311D LRR 8'- 6"Stick	14.01	\$18.38	\$88.67	2	\$214.11	\$177.34	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$39.59	\$88.67	1	\$128.26	\$88.67	\$250.00
Power Mulcher (Reinco M90)	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$250.00
Subtotals:					\$960.78	\$707.33	\$1,750.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$15.34	3	\$46.02	\$46.02
Water Tanker, 3,500 Gal.	\$46.91	1	\$46.91	\$46.91
Fuel Tanker, 4x2, 170 HP	\$32.92	1	\$32.92	\$32.92
Lube Truck, 4x2, 170 HP	\$38.68	1	\$38.68	\$38.68
Subtotals:			\$164.53	\$164.53

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>RIFLE</u>	
Total one-way travel distance:	<u>60.00</u>	miles
Average Travel Speed:	<u>40.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$10,425.89</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$493.59</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>1.50</u>	<u>1.50</u>
Return Time (Hours):	<u>1.50</u>	<u>1.50</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>4.00</u>	<u>3.00</u>

JOB TIME AND COST

Total job time: 8.00 Hours

Total job cost: \$10,919.48