

Canadian Natural Resources

Meeting Minutes

August 25, 2022: August 25, 2022 via Webex 3: PM






RE: Armada Gas Plant



Present: Barry Reid
Greg Wood
Michelle Thoen
Mike Kozak
Darren Smith
Mike Griffin

1. Discussion of Armada Gas Plant

- Turnaround Discussion – Darren Smith to provide a list of what was exactly done during the outage of the T/A for 2022 to the Both Greg and Barry whom are the Armada Owners.

Turnaround Notes below have been provided by Mike Griffin for the daily work that was done during T/A:

 May 2, 2022.docx  May 3, 2022.docx  May 4, 2022.docx  May 5, 2022.docx  May 6, 2022.docx

 May 7, 2022.docx  May 8, 2022.docx

- **Higher Operating Cost Discussion**

- Recent costs for R&M and E&I Costs showing for May and June Opex would be as follows:
 - Mycom compressor service that required more work than expected. Was not budgeted under the TA. **\$6K**
 - Cooler cleaning under opex.
 - Inspections found some pocket weld psv's needing remedied. Additional piping and crew work needed to relocated psv's
 - Deadleg piping removed. Took the opportunity when the plant was down. Safety & Integrity concerns.
 - Used the outage to complete a lot of the yearly E&I PM work while services were on site.

- Inspection Reports to be provided to the Armada Owners. **Waiting on Integrity to provide us the 2022 T/A Inspection Reports.**
- Integrity concerns: field was just notified on this and should be resolved in the next couple of weeks. There could be an additional cost for this but owners will be notified.
- Discussion of the Revolution 12-32 sour well and there will be no extra costs to owners for bringing this well on. Based on previous rate this well did produce approx. 30e3m3/d.
- Owners requested a copy of the last Emissions report – **Waiting on the third triannual survey that was done and waiting for this report.** – No Deficiencies were found. This Report is standard. CNRL is already at low bleed which is the requirement for existing facilities.
- Abandonment costs for the facility is as follows:
 - Abandonment Costs of the facility provided by the Site Specific Assessment done in 2021 is a Gross Liability of \$714,834.00.

Greg Wood asked why the Operating Costs have increased from 2018-2020:

- Gross Operating Cost 2018 – \$271,069
- Gross Operating Cost 2019 – \$247,931
- Gross Operating Cost 2020 – \$344,558.
 - Extra opex of 68.4K is due to the following:
 - Flare Stack Upset in 2020 caused additional R&M Costs for Ridgeline Canada 12K, Doug's Vac 9K , Baseline 9K, Newell Disposal 2.4K, PTW fko sd materials 5K, and picker 4K
 - MEC's K301 Compressor Repair 6K
 - Firetube repairs reboiler, Chance 3.3K
 - Dapajo 5K, Univar 4.3K
 - Unit Heater for building 2.7K
 - Doug Frey – Mycom refridge comp Oh 9K

There is some smaller stuff that could be included but this explains the bulk of the increase in R&M for 68.4K in 2020.

Fee Discussion

- Both Greg and Barry would like to see the Gross T/A amount for the Armada Plant Amortized over 3 years.
 - This would increase the fee. Both Owners would like the fee to be increased to \$35.00 from \$30.00
 - Field doesn't believe that the custom users can handle this increase
 - As a result a meeting will be set for mid-month of September to discuss if Armada can handle a fee increase.
 - CNRL will also be getting a fee increase to whatever the custom users are paying at the time our contract expires at end of March.

Accounting Action Item

Fuel Gas /Vent – Report that Barry had given from Petrinex was a lot lower Jan 2021 to April 2022. Refer to Barry's Table below:

Answer for Discrepancy:

- Fuel/Vent Discrepancy – As of 2022-05 CNRL reports both Fuel numbers at the Plant, prior to this CNRL had reported one number at the GGS 0082463 and one number at the Plant 1480. May 2022 the plant was shut in while performing an overhaul.

What has happened Owners would like to know why May 2022 volumes are different than what they were JIB'd per the table below.

- Spoke with Richard Smith and he has confirmed that the correct Volume for May 2022 is 1676.4. He has also provided the backup in the attached PDF to show this. He doesn't know where the 2076.9 number is coming from. Please see the attachment that has been provided from Accounting which substantiates the 1676.4 number.

BILLED JIB VOL = 1035.4
Grossed up
= 2076.9



Fee Revenue
2022-05.pdf

Armada Gas Plant 01-18-017-18W4M - Volumes / Pricing Year 2020

Year 2021

		2020 E3 m3												2021 E3 m3											
		Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22				
		31	31	28	30	30	31	30	31	31	30	31	30	31	31	28	30	30	31	30	31				
Petrinex Volumes (Gross)																									
REC	Petrinex Total Received (E3 m3) AB GS 0082463 1-18 LP	2653.8	2636.5	2361	2606.6	1180.1	1196.7	1242.5	1571.8	2098.6	1979.7	1905.3	1762.4	1498	1513	1370.3	1653.4	1504.7	1676.4	2124.8					
	AB GS 0082466 1-18 HP																								
	Petrinex Total Received (E3 m3)	2653.8	2636.5	2361.0	2606.6	1180.1	1196.7	1242.5	1571.8	2098.6	1979.7	1905.3	1762.4	1498.0	1513.0	1370.3	1653.4	1504.7	1676.4	2124.8	0.0				
	Net JIB volume (input)	1327	1307.9	1179.4	1302.5	589.6	598.4	621.2	786	1049.2	989.8	883.7	818.8	683.3	748.5	685.1	826.7	752.4	1035.4	1062.2					
	Grossed up volume from JIB	2694.1	2615.9	2358.9	2606.1	1179.3	1196.9	1242.5	1572.1	2098.5	1979.7	1767.5	1637.7	1386.7	1407.1	1378.3	1653.5	1504.9	2070.9	2124.5	0.0				
	Difference & Volume (E3 m3)	-0.3	0.6	2.1	1.5	0.8	-0.2	0.0	-0.3	0.1	0.0	137.8	124.7	131.3	15.9	0.0	-0.1	-0.2	-394.5	0.3					
	Difference & (%)	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	7.2%	7.1%	8.8%	1.1%	0.0%	0.0%	0.0%	-23.5%	0.0%					
DSP	Sales From 1-18 Plant	2498.9	2495.6	2237.7	2454.8	1121.4	1122.2	1143.5	1450.4	1999.5	1861.8	1843.3	1729.5	1452.9	1439.2	1337.4	1611.7	1448.2	1573.4	1943.4					
	AB GP 0001734	46.7	46.8	42.6	47.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	Fuel	62.1	51	48	51.4	18	46.1	42.6	44.7	42.2	42.7	43.9	43.8	63.8	68.7	61.3	73	72.2	125.6	160.1					
	Vent	19.6	0.6	0.5	0.2	0.4	0.2	0.2	0.4	0.4	0.2	0.8	0.8	0.9	0.7	1.8	1.9	2	2.2	2					
	Shrinkage/Fuel Etc.	5.0%	4.6%	5.2%	5.0%	5.0%	6.2%	8.0%	7.7%	4.7%	6.0%	3.9%	1.9%	3.0%	4.9%	2.4%	2.5%	3.8%	6.1%	8.5%					
	Received Monthly Total Petrinex (E3m3)	2,653.8	2,616.5	2,361.0	2,606.6	1,180.1	1,196.7	1,242.5	1,571.8	2,098.6	1,979.7	1,905.3	1,762.4	1,498.0	1,513.0	1,370.3	1,653.4	1,504.7	1,676.4	2,124.8					
	Received Total (mcf/d)	3,039.0	2,996.3	2,993.4	3,084.5	1,396.5	1,370.4	1,470.3	1,800.0	2,403.2	2,342.6	2,181.9	2,085.5	1,715.5	1,732.6	1,737.3	1,956.5	1,780.6	1,919.7	2,514.3					
	AECO 30 Day Spot Pricing \$/Cdn/MMBtu	\$ 2.57	\$ 2.78	\$ 3.87	\$ 2.74	\$ 2.88	\$ 3.08	\$ 1.40	\$ 3.91	\$ 3.85	\$ 3.80	\$ 5.30	\$ 4.77	\$ 4.16	\$ 4.48	\$ 4.24	\$ 5.08	\$ 6.91	\$ 7.57	\$ 7.30	\$ 5.45				

DAILY SHIFT UPDATE

Date: May 2, 2022

Start Of: Dayshift

SAFETY (Discussion, Incidents, Issues)

Went through with all pre-job expectations, CNRL way, 4 Pillars, etc.

*flare isolation on psv's. Possible vapours can return. Splash loading into plastic tub with no grounding wire.

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WORK COMPLETED	NEXT SHIFTS WORK
<ul style="list-style-type: none"> Shut down & de-pressure plant. LOTO & blinding. Vessels & piping sucked on, engine & compressor tear down. Reboiler piping removed, still column washed, firetube loaded for Brooks. Bullet blinded & air mover on. PSV's pulled. 	<ul style="list-style-type: none">
LOCKOUTS REQUIRED	RESOURCES REQUIRED
<ul style="list-style-type: none"> Perimeter blinding & LOTO LPG bullet blinding and air 	CNRL: Gary Jerad Mike Dan Stacy Andy Chance: 5 guys/12 hrs Dougs Vac: 2 guys/12 hrs Dexter: 3 guys/12 hrs PTW: 1 guy/12 hrs MECs: 5 guys/14hrs Bigfoot: 2 guys/6hrs

DAILY SHIFT UPDATE

Date: May 3, 2022

Start Of: Dayshift

SAFETY (Discussion, Incidents, Issues)

- Found stored pressure in OOS piping, scope change identified thru wso, mec no monitor on site
- Positive note, no seal on face mask for entry so no entry,

WORK COMPLETED	NEXT SHIFTS WORK
<ul style="list-style-type: none"> • Wash bullet, swap out reboiler, UT inspections, compressor tear down/cleaning, pull gas/gas exchanger end plate, psv removals, femp repairs, E&I, reboiler work & firetube sandblasted • 	<ul style="list-style-type: none"> •
LOCKOUTS REQUIRED	RESOURCES REQUIRED
<ul style="list-style-type: none"> • Perimeter blinding & LOTO • LPG bullet blinding and air • 	CNRL Jerad Mike Dan Dustin Leanne Chance: 5 guys/12 hrs Dougs Vac: 2 guys/6 hrs Dexter: 4 guys/12 hrs PTW: 1 guy/10 hrs MECs: 3 guys/9 hrs Grady: 1 guy/10 hrs G&R: 2 guys/10 hrs

DAILY SHIFT UPDATE

Date: May 4, 2022

Start Of: Dayshift

SAFETY (Discussion, Incidents, Issues)

- Worker stepped outside man lift working on tank roof, asked to stay off roof
- Worker using compressed air to blow dust off co-worker after cooler cleaning
- Delivery truck proceeded to work area without checking in at office

WORK COMPLETED	NEXT SHIFTS WORK
<ul style="list-style-type: none"> • Dry ice & inspect bullet, pull blinds, close manway • Gas to gas plates installed • Deadleg piping removed in process • Compressor OH • Cooler cleaning • Vessel cleaning old dehy 	<ul style="list-style-type: none"> •
LOCKOUTS REQUIRED	RESOURCES REQUIRED
<ul style="list-style-type: none"> • Perimeter blinding & LOTO • LPG bullet blinding and air • Cooler fan LOTO 	CNRL: Gary Jerad Mike Dan Morgan Alec Chance: 5 guys/12 hrs Dougs Vac: 2 guys/8 hrs Dexter: 4 guys/12 hrs PTW: 1 guy/8 hrs MECs: 2 guys/10 hrs Grady: 1 guy/10 hrs Alco: 2 guys/14hrs Bigfoot: 2 guys/9hrs

DAILY SHIFT UPDATE

Date: May 5 2022
Start Of: Dayshift

SAFETY (Discussion, Incidents, Issues)

- Reboiler firetube supports trimmed for spacing
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WORK COMPLETED	NEXT SHIFTS WORK
<ul style="list-style-type: none"> • Compressor OH • Parts returned from CSM • E&I • Install psv's • Piping work process • Finished inspections. Do compressor at 500 hr. • Reboiler install work 	<ul style="list-style-type: none"> •
LOCKOUTS REQUIRED	RESOURCES REQUIRED
<ul style="list-style-type: none"> • Perimeter blinding & LOTO 	CNRL: Gary Mike Leanne Chance: 5 guys/12 hrs PTW: 3 guy/8 hrs MECs: 4 guys/12 hrs Grady: 2 guy/8 hrs RCI: 1 guy/12 hrs

DAILY SHIFT UPDATE

Date: May 6 2022

Start Of: Dayshift

SAFETY (Discussion, Incidents, Issues)

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WORK COMPLETED	NEXT SHIFTS WORK
<ul style="list-style-type: none"> Compressor OH Parts returned from CSM E&I Piping work process Inlet sep float column Finish reboiler install Start cleanup Finish Micom Finish psv's Fix pocket psv's in process 	<ul style="list-style-type: none">
LOCKOUTS REQUIRED	RESOURCES REQUIRED
<ul style="list-style-type: none"> Perimeter blinding & LOTO 	CNRL: Gary Mike Chance: 7 guys/12 hrs PTW: 1 guy/8hrs MECs: 4 guys/12 hrs RCI: 1 guy/12 hrs Blainco: 1 guy/9hrs

DAILY SHIFT UPDATE

Date: May 7 2022

Start Of: Dayshift

SAFETY (Discussion, Incidents, Issues)

- Scope change identified for some structural welding in re fridge building
- Clear communication with crews as blinds being pulled

WORK COMPLETED	NEXT SHIFTS WORK
<ul style="list-style-type: none"> • Finish OH compressor & engine • Pull blinds • Unlock, pressure & purge facility • Clean up 	<ul style="list-style-type: none"> •
LOCKOUTS REQUIRED	RESOURCES REQUIRED
<ul style="list-style-type: none"> • Perimeter blinding 	CNRL: Gary Mike Chance: 5 guys/12 hrs MECs: 6 guys/12 hrs

DAILY SHIFT UPDATE

Date: **May 8 2022**

Start Of: **Dayshift**

SAFETY (Discussion, Incidents, Issues)

- Don't get careless for last day and start up. Tired, don't rush. Be safe.
- Misunderstanding on compressor discharge. Blind was not flipped to sales. Wrong line identified prior.

WORK COMPLETED	NEXT SHIFTS WORK
<ul style="list-style-type: none"> • Finish las of overhaul. Start up/shut down, final checks • E&I shut down checks/esd function tests • Relocate process fg scrubber psv. Hazard for heads hitting <p>BOL 4:30pm</p>	<ul style="list-style-type: none"> •
LOCKOUTS REQUIRED	RESOURCES REQUIRED
	<p>CNRL: Gary Jerad Mike Dan Chance: 2 guys/12 hrs MECs: 5 guys/12 hrs PTW: 2 guys/16hrs</p>