

Appendix 3 – Noise impact assessment summary form
(Please retain detailed records for compliance purposes)



Licensee: Enterprise Solar GP Inc. on behalf of Enterprise Solar LP.

Facility name: Enterprise Project Type: Solar Power Facility

Legal location: Sections 26 and 27, Township 16, Range 25, West of the Fourth Meridian

Contact: Rebecca Crump (Enterprise Solar) Telephone: 303 439 4289

1. Permissible Sound Level (PSL) determination (Rule 012, Section 2)

Complete the following for the most affected dwelling(s) or at a distance of 1.5 km where there are no dwellings:

Dwelling Distance from facility (m)	Dwelling Direction from facility	BSL (dBA)	Daytime adjustment (dBA)	Nighttime PSL (dBA)	Daytime PSL (dBA)
R01: 110 m	northeast	40	10	40	50
R02: 290 m	northeast	40	10	40	50
R07: 50 m	south	40	10	40	50
R24: 860 m	west	40	10	40	50

2. Sound source identification

For the new and existing equipment, identify the model major sources of noise from the facility, their associated sound power level (PWL) or sound pressure level (SPL).

New and/or Existing Equipment Noise Sources (include make and model, power rating)	<u>Predicted</u> or <u>Measured</u>		Data source (Vendor Measurement theoretical, etc.)	Distance SPL measured from the noise source (m)
	<input type="checkbox"/> PWL (dBA) or <input type="checkbox"/> SPL (dBA)	<input type="checkbox"/> PWL (dBA) or <input type="checkbox"/> SPL (dBA)		
New Project Equipment: Sungrow SG3425/3600UD-MV Integrated Inverter-Transformer Unit Project will require 33 inverter-transformer units. NIA modelled 33 inverter-transformer units at full power operation – i.e., maximum potential noise emissions.	sound power level (PWL) of 90.8 dBA per unit	n/a	sound power level estimated by Golder Associates Ltd. based on electrical power rating and professional experience/judgement	n/a
New Project Equipment: NEI Engineering Main Power Transformer 13.8/34.5/138 kV 105 MVA Project will require one main power transformer. NIA modelled main power transformer in Oil Natural Air Forced 2 nd Stage Cooling (ONAF2) operating mode – i.e., maximum potential noise emissions.	sound power level (PWL) of 99.1 dBA in ONAF2 operating mode	n/a	sound power level estimated using noise data provided by equipment vendor (NEI Engineering)	n/a
New Project Equipment: electric motors for solar panel tracking system Project will use electric motors to adjust solar panel orientation to track the movement of the sun across the sky. RES Project engineers have confirmed these motors operate at very slow speeds and	n/a – noise emissions are negligible	n/a	n/a	n/a

have negligible noise emissions; therefore, they were not included in the NIA.				
Existing Third-Party Facility: Encana Corporation Compressor Station in 5-25-16-25W4 Alberta Energy Regulator (AER) Directive 56 application for this facility indicates the presence of two 145 kW gas-driven compressors with associated cooling and dehydrator unit (see Attachment A).	sound pressure level (SPL) of 32 dBA at 1.15 km	n/a	sound pressure level taken directly from AER Directive 56 application for this facility (see Attachment A)	1150 m

Provide a tentative schedule and timing for the operation, maintenance and testing of the equipment

Project construction is scheduled to commence on or around August 1, 2021 and continue through October 2022, with a break over the winter.

3. Normal operating conditions

When using manufacturer’s data for expected performance, it may be necessary to modify the data to account for actual operating conditions (for example, indicate conditions such as operating with window/doors open or closed, load, RPM). Describe any considerations and assumptions used in preparing estimates:

Project will operate during daylight hours. During most parts of the year, operations will be confined to the Rule 012 daytime period (7 am to 10 pm). During long summer days, operations may extend into parts of the Rule 012 nighttime period (10 pm to 7 am). The NIA conservatively modelled continuous Project operations 24 hours per day.

4. Noise modelling parameters

If modelling was conducted, identify the model input parameters used (see Section 3.2):

Computer noise models developed for the NIA make use of the ISO 9613-2 technical standard, which reflects downwind conditions (i.e., wind blowing from sources to receptors) 100% of the time. Computer noise models make use of a groundfactor (G) of 0.5, which corresponds to 50% hard/reflective ground cover and 50% porous/absorptive ground cover. The Project area is primarily farm fields with very few hard/paved surfaces, so using G=0.5 is a conservative approach to modelling Project noise. Computer noise models use a temperature of 10 deg C and a relative humidity of 70%; these are default settings for the ISO 9613-2 technical standard and represent typical nighttime summer conditions. Three receptors included in the NIA (R01, R02, and R07) are one-storey dwellings; these receptors were modelled at a height of 1.5 metres above ground. The fourth receptor (R24) is a two-storey dwelling; this receptor was modelled at a height of 4.5 metres above ground.

(continued)

5. Predicted sound level/compliance determination

Predict the cumulative sound level at the most affected dwelling(s) or at a distance of 1.5 km where there are no dwellings. Typically, only the nighttime sound level is necessary, as levels do not often change from daytime to nighttime. However, if there are differences between day and night operations, both levels must be calculated.

Predicted Nighttime Cumulative Sound Level Including the New or Modified Facility (dBA)						
Receptor	Ambient Sound Level	Sound Level from Existing, Approved, and Proposed (Deemed Complete) Facilities	Baseline Sound Level	Predicted Sound Level from new or modified facility alone	Cumulative Sound Level	Permissible Sound Level
R01	35	32.0	36.8	22.4	36.9	40
R02	35	30.4	36.3	21.7	36.4	40
R07	35	13.3	35.0	25.8	35.5	40
R24	35	10.2	35.0	21.2	35.2	40

Predicted Daytime Cumulative Sound Level Including the New or Modified Facility (dBA)						
Receptor	Ambient Sound Level	Sound Level from Existing, Approved, and Proposed (Deemed Complete) Facilities	Baseline Sound Level	Predicted Sound Level from new or modified facility alone	Cumulative Sound Level	Permissible Sound Level
R01	45	32.0	45.2	22.4	45.2	50
R02	45	30.4	45.1	21.7	45.2	50
R07	45	13.3	45.0	25.8	45.1	50
R24	45	10.2	45.0	21.2	45.0	50

Is the predicted cumulative sound level less than the permissible sound level by a margin of three dBA?

Yes No

If **No**, conduct a detailed NIA as per Section 3 of AUC Rule 012.

6. Supply any other relevant information you want to provide to the AUC. Submit additional pages if required.

Attachment A presents the AER Directive 56 application for the Encana compressor station in 5-25-16-25W4. This compressor station is the only existing/approved/proposed facility with the potential to influence noise levels at the receptors considered in the Project NIA (i.e., R01, R02, R07, and R24).

7. If the nighttime permissible sound level is higher than 40 dBA L_{eq} , provide supplementary information to support the use of such permissible sound level.

N/A – the nighttime PSL is 40 dBA at all receptors considered in the Project NIA (i.e., R01, R02, R07, and R24).

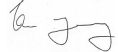
8. Explain what measures have been taken to address construction noise.

Where practical, RES will implement construction noise mitigation measures identified in Section 2.11 of Rule 012: conduct construction activities during the daytime period (7 am to 10 pm), advise nearby residents of noisy activities and schedule these activities to reduce disruption, ensure construction equipment have well-maintained mufflers, and respond expeditiously to noise complaints.

9. Acoustical practitioner's information (See Section 3.2 (15)):

Company: Golder Associates Ltd.

Name: **Victor Young, MSc**



Experience: Approximately 10 years of experience completing NIAs for industrial facilities in Alberta and throughout Western Canada

Title: Acoustic Scientist

Telephone: 403-532-5745

Date: January 26, 2021

Name: **Andrew Faszler, PEng**



Experience: Approximately 20 years of experience completing and reviewing NIAs for industrial facilities in Alberta and internationally

Title: Senior Engineer

Telephone: 403-532-5783

Date: January 26, 2021

DAY MONTH YEAR

27-Sep-2005

Application #

1420760

APPLICANT'S FILE NUMBER

The applicant certifies that the information here and in all supporting documentation is correct and that the facility, pipeline or well will be drilled, constructed, amended, and abandoned in accordance with all regulatory requirements or as directed by the Alberta Energy and Utilities Board.

SUBMISSION STATUS Registered

SUBMISSION ID 62786

CREATION DATE 27-Sep-2005

1. APPLICANT INFORMATION

APPLICANT

COMPANY NAME EnCana Corporation BA CODE 0026

CONTACT NAME Ryan Hansen

TELEPHONE (403) 645-8316 FAX (403) 645-3701

E-MAIL ryan.hansen@encana.com

CONSULTANT

COMPANY NAME Gem Production Management Ltd. BA CODE A0GX

CONTACT NAME Ritu Gurjar

TELEPHONE (403) 781-9481 FAX (403) 255-5407

E-MAIL Ritu_gurjar@gemproduction.ab.ca

2. ATTACHED SCHEDULES

LICENCE TYPE F APPLICATION PURPOSE New Licence

ORIGINAL LICENCE NUMBER

Format: Prefix + 7 Mandatory Digits + Suffix
i.e.: B00000414X OR 0234567

ORIGINAL LICENCE EVENT SEQUENCE

SCHEDULES INCLUDED ON CURRENT SUBMISSION

Facility Routine B040

If you have any questions or comments, please contact the EAS Administrator.

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DAY MONTH YEAR

27-Sep-2005

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SUBMISSION STATUS Registered SUBMISSION ID 62786 CREATION DATE 27-Sep-2005

1. IDENTIFICATION

Applicant Ba Code 0026 Applicant Name EnCana Corporation

Licence Type Facility Application Purpose New Licence Licensing Process Facility Routine

2. PARTICIPANT INVOLVEMENT REQUIREMENTS

1. Consultation and notification requirements have been met: Public Yes No
 Industry Yes No
2. There are outstanding objections/concerns related to this application Yes No
- 3a. Distance to nearest surface development..... 1.15 Km
- 3b. Distance to nearest residence..... 1.15 Km

3. EMERGENCY RESPONSE PLANNING

1. The applicant will meet EUB requirements for emergency response planning Yes
- 2a. The facility requires a new emergency response plan Yes No
- 2b. The facility requires an amendment to an existing emergency response plan Yes No

4. APPLICATION TYPE

Category Type B040 DESCRIPTION Compressor station < 0.01 mol/kmol H2S in inlet stream

Temporary Facility

Maximum (H₂S) Content of Inlet Gas 0 0 ppm
 0 mol/kmol
 0 percent

Licence Amendment types:

- | | |
|--|--|
| <input type="checkbox"/> Change category and/or type | <input type="checkbox"/> Install/remove compression |
| <input type="checkbox"/> Change maximum licensed inlet rates | <input type="checkbox"/> Change H2S content of inlet gas |
| <input type="checkbox"/> Install/remove injection/disposal pumps | <input type="checkbox"/> Change product/product recovery rates |
| <input type="checkbox"/> Add regenerative sweetening | <input type="checkbox"/> Add nonregenerative sweetening |
| <input type="checkbox"/> Change maximum continuous sulphur emissions | <input type="checkbox"/> Extend expiry date |
| <input type="checkbox"/> Change status to permanent | <input type="checkbox"/> Add new flare/incinerator stack |
| <input type="checkbox"/> Increase sulphur recovery efficiency | <input type="checkbox"/> Decrease sulphur recovery efficiency |
| <input type="checkbox"/> Change in acid gas disposal method | <input type="checkbox"/> Degrandfather sulphur recovery facility |

Location LE LSD SEC TWP RNG MDN <u>5 25 16 25 W4</u>	Latitude (NAD 83) <u>50.374099</u>	Latitude (NAD 83) <u>-113.321276</u>
Original Facility Licence No. F _____	Linking Facility Licence No. F _____ <input checked="" type="checkbox"/> Direct to Sales	Temporary / Extended Facility Expiry _____
EUB-Designated Field or Strike Area <u>VULCAN</u>	EUB Field Centre <u>Midnapore</u>	

5. DESIGN CRITERIA

Total Inlet Rates	Raw Gas	Oil/Bitumen	Condensate	Water	Sulphur
	<u>27.3</u> 10 ³ m ³ /d	<u>0</u> m ³ /d	<u>0</u> m ³ /d	<u>0</u> m ³ /d	<u>0</u> t/d

Total Continuous Emissions Rates	NOx	CO2	Flaring/Incineration	Venting
	<u>7.10</u> kg/h	<u>4.14</u> t/d	<u>0</u> 10 ³ m ³ /d	<u>0</u>

6. TECHNICAL INFORMATION

1. The proposed facility is part of an experimental, primary, or commercial crude bitumen scheme Yes No
- 1a. If YES, Scheme Approval No..... _____
2. Equipment spacing requirements will be met..... Yes No
3. The facility will meet all current and applicable CSA standards..... Yes No
4. Gas will be continuously flared, incinerated, or vented..... Yes No
- 4a. If YES, the gas flaring, incinerating, or venting will comply with the requirements of Guide 60..... Yes No
5. The facility meets the EUB Noise Control Directive requirements (Guide 38)..... Yes No
6. EUB storage requirements will be met (Guide 55)..... Yes No
7. EUB oilfield waste management requirements will be met (Guide 58)..... Yes
8. EUB production measurement requirements will be met..... Yes No
9. NOx air emissions meet the Alberta Ambient Air Quality Guidelines..... Yes No
10. Approval from or registration with Alberta Environment is required..... Yes No
11. Alberta Environment requires an environmental impact assessment..... Yes No
12. The proposed facility will include compressors (new licence only)..... Yes No
13. The proposed facility will include pumps (new licence only)..... Yes No
14. The proposed facility site requires Historical Resources Act clearance..... Yes No
- 14a. If YES, Alberta Community Development has granted clearance for the facility site..... Yes No

SUBMISSION STATUS Registered SUBMISSION ID 62786 CREATION DATE 27-Sep-2005

15. The licensee is the only working interest participant. If NO, attach a completed
Schedule 2.1 Yes No



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1. IDENTIFICATION

Applicant Ba Code 0026 Applicant Name EnCana Corporation

Licence Type Facility Application Purpose New Licence Licensing Process Facility Routine

2. COMPRESSORS

Install (I) / Remove (R)	Rating	Driver Power Source	NOx Emission Rating
<u>i</u>	<u>145</u> kW	<u>Gas</u>	<u>24.5</u> g/kWh
<u>i</u>	<u>145</u> kW	<u>Gas</u>	<u>24.5</u> g/kWh

Total Number of Gas Compressors on Site	Total Number of Electric Compressors on Site	Total On-site Compressors Wattage
<u>2</u>	<u>0</u>	<u>290</u> kW

3. PUMPS

Install (I) / Remove (R)	Rating	Driver Power Source	NOx Emission Rating

Total Number of Gas Pumps on Site	Total Number of Electric Pumps on Site	Total On-site Pumps Wattage
		kW

4. TECHNICAL INFORMATION

- 1a. Night time permissible sound level (PSL) at the nearest or most impacted residence..... 40 dBa
- 1b. Predicted overall sound level at the nearest or most impacted residence..... 32 dBa

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