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## Heavy Oil

### Controlled Document

Quest CCS Project

# Quest Heat Integration Report 2016

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2	February 20, 2017	Issued for Annual Report Review	Adella Domm	Wilfried Maas	

## Signatures for this revision

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## Summary

This document summarizes heat recovery between the Quest CCS project and the Scotford Upgrader, and documents any updates to heat integration schemes associated with the Quest facility.

## Keywords

Quest, CCS, Heat Integration

## DCAF Authorities

Date	Role	Name	Signature or electronic reference (email)
		Add name	Actual signature
		Add name	Actual signature
		Add name	Actual signature

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## 1. QUEST HEAT INTEGRATION SUMMARY

Installed heat integration within the Quest CCS capture unit is as per the BDEP. As-built process engineering flow schemes and utilities engineering flow schemes (P&IDs) have been included in the detailed report submission for reference.

Heat integration with the base Scotford Upgrader comprises of demin water heaters, pre-heating demin water from tankage, upstream of the de-aerator. This is accomplished via cross exchange with the CO<sub>2</sub> stripper reboiler LP steam condensate stream. The installed process line-up reduces the stripping steam requirement in the de-aerator.

Heat recovered in 2016 amounted to 96,260 MWh, equivalent to ~155,400 tonnes of LP steam savings over the year (~18 t/h). This was 12% of the total LP steam utilized in the Quest capture unit to drive amine regeneration and local heating.

**Table 1-1 Heat Recovery Summary Since Commissioning**

Savings	Cumulative		2015 only	2016 only
	2015	2016		
Total heat recovered (MWh)	33,617	129,877	33,617	96,260
Total heat recovered (tonnes equivalent LP Steam)	54,275	209,695	54,275	155,421
Total heat recovered (average rate in tonnes equivalent LP Steam per hour)	17	18	17	18
Total heat recovered (% Quest plot LP steam demand)	13%	13%	13%	12%

## 2. HEAT INTEGRATION CHANGES FROM DESIGN SINCE START-UP

No changes were made to the original heat integration design as specified in the BDEP.

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